

## "Investigation of Commodity Food Standards and Analytical Methods in Asia" ( II )

Reported by : Hiroaki Hamano, International Life Sciences Institute  
(ILSI Japan)

Investigation Yumi Asada (Unilever Japan Co.)

Collaborator : Hiroshi Iwamoto (Morinaga Milk Industry Co., Ltd.)  
Youichiro Umeki (Danisco Japan Co.)  
Hiromi Ohta (Suntory Wellness Ltd.)  
Yoko Ogiwara (Ajinomoto Co., INC. ASEAN Regional  
HQs)  
Kiyohisa Kaneko (Coca-Cola (Japan) Co., Ltd.)  
Kaori Kusano (Kirin Group Office Company, Ltd.)  
Yukio Suzuki (Schiff's Japan)  
Fumiko Sekiya (Takasago International Co.)  
Tomoko Takahashi (Nestle Japan Ltd.)  
Hisahiro Tatewaki (Kirin Holdings Company, Ltd.)  
Hidekazu Hosono (Suntory Business Expert Ltd.)  
Takanori Mine (Suntory Business Expert Ltd.)  
Kensuke Watanabe (Suntory Business Expert Ltd.)  
Shuji Iwata (ILSI Japan)  
Kazuo Sueki (ILSI Japan)  
Hisami Shinohara (ILSI Japan)  
Aki Chano (ILSI Japan)  
ILSI Korea  
ILSI Focal Point in China  
ILSI Southeast Asia Region

### 1. Purpose of the Investigation

In order to strengthen management practice and international competitiveness of Japanese food industry that is facing quantitative saturation and maturity in domestic market, it is necessary to address developing business in East Asian regions where attractive market is forming due to increasing population and dynamically growing economy.

In the past, Japanese food industry has been reluctant to develop new

business in East Asia due to lack of information and understanding on food standards and methods of analysis for pesticide residues in the countries. The information including consistency with international standards such as Codex Standards should be compiled on database. Providing these information enable Japanese food industry to start and promote new business or facilitate smooth business in East Asian regions.

This investigation aimed to encourage Japanese food industry to enter to East Asian market and to enable to start new business, by using results of the investigation released in a workshop, training courses and/or individual consulting sessions held in Japan or in such East Asian countries.

## **2. Outline of the Investigation**

In order to expand distribution of foods and food materials in East Asian region according to MAFF (Ministry of Agriculture, Forestry and Fisheries)'s "East Asian Food Industry Revitalization Strategy", standards and methods of analysis for foods and food materials, and pesticide residues are required to be standardized or harmonized among East Asian region. This project is intended to investigate the standards and methods of analysis of main foods and food materials in major countries in the East Asian region and contribute to the promotion and easy business developments of food industries in Japan and those in East Asian countries by means of exchanging and sharing of information and dialogues on procedures for quality control and measures for resources and environments in the East Asian region. This investigation was conducted with the help of investigative specialists in the countries surveyed. The results of the investigation were released at **“International Conference for Sharing Information on Food Standards and Resource and Environmental Conservation for Food Industries in Asia Pacific – Challenges and Opportunities for Food Safety & Human Health–”** held at the Pathumwan Princess Hotel in Bangkok in Thailand on March 4 (Fri), 2011.

This 2010 Overseas Business Support Project for Japanese Food Industry in East Asia has taken over the 2009 project. In the 2009 project, the investigations were made on Codex, Korea, China and Malaysia, Songapore, and the Philippines selected from the countries in Sough East Asia. The results of the investigation were shared at the workshop held (in Tokyo) in March 2010, where many participants pointed out the need for such information; they showed the high expectations for such information. Therefore, the investigation was extended to Thiland, Vietnam and Indonesia in the 2010 project, in which we investigated the methods of

analysis of foods and food materials in more detail.

### **2.1 Countries covered by the Investigation :**

In the light of marketability (including population) , business activities of Japanese companies possessing overseas subsidiaries and market potential in East Asian countries, we selected 8 countries; the Republic of Korea, the People's Republic of China, Malaysia, Singapore, the Philippines, Indonesia, Thailand, and Vietnam.

### **2.2 Food(s) covered by the Investigation :**

When designing the investigation program, the first pilot study covered instant noodles, carbonated drinks and prepared frozen foods which were considered to be relatively common in the region. Furthermore, the information of milk was also collected for reference.

### **2.3 Methods of the Investigation :**

This project was conducted by International Life Sciences Institute (ILSI Japan) with cooperation of ILSI's international network, namely ILSI Korea, ILSI Focal Point in China and ILSI Southeast Asia Region (ASEAN countries). Practically, the Investigation was conducted under the following procedures:

- (1) ILSI Japan designed the investigation program and prepared investigation forms to describe the standards and methods of analysis for the foods covered by the investigation.
- (2) ILSI Japan sent the investigation program and forms to ILSI branch offices in target countries. The investigation forms might be modified according to conditions in the target country. The results were filled in the investigation forms.
- (3) ILSI Japan compiled and analyzed the data.
- (4) ILSI Japan convened an international conference together with the persons in charge of the investigation forms in the target countries to share the results widely.

### **2.4 Project team :**

ILSI Japan set up the project team within its "International Cooperation Committee", a body of ILSI Japan. The team consisted of members representing each food areas including noodle products, beverages, frozen foods and milk products. The team designed the program and proposed items of standards and methods of analysis for the selected foods. These items were adjusted within cooperating ILSI branch offices (Korea, China and Southeast

Asia) to be finally determined.

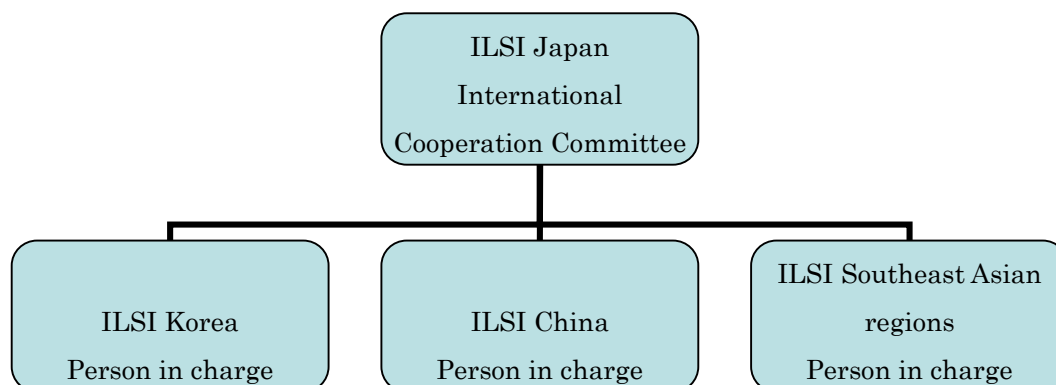
The project team conducted the investigation with the help of ILSI international network, especially with the following ILSI branch offices.

ILSI Japan branch: Japan

ILSI Korea branch: Korea

ILSI China branch: China (not including Hong Kong and Taiwan)

ILSI Southeast Asian regions branches: Malaysia, Singapore, Philippines, Indonesia, Thailand, and Vietnam



## 2.5 Schedule of the Investigation :

This proposed project was conducted according to the following schedule.

Preliminary investigation and program design: June – October, 2010

Filling in the investigation forms: October – December, 2010

Collection and analyzing the data and extraction of future tasks: January – February, 2011

International conference: March 4, 2011

Preparation of the report: March 31, 2011

Duration of the survey program : 11 months

## 3. The Investigation Results for Each Country

### 3.1 Commodity Standards developed by Codex Alimentarius Commission

For definition contents of "Food Standards", Commodity Standards developed by Codex Alimentarius Commission<sup>1</sup>, which could be commonly accepted by member countries, were used in this investigation as standard.

<sup>1</sup> Codex Alimentarius Commission is an intergovernmental body established in 1962 by FAO (Food and Agriculture Organization of the United Nations) and WHO (World Health Organization) to implement the joint FAO/WHO Food Standards Programme. Its purpose is protecting the health of consumers and ensuring fair practices in the food trade through development of international food standards. Food standards developed by Codex Alimentarius Commission are intended to harmonize food standards worldwide under the multilateral trade agreement. [http://www.codexalimentarius.net/web/index\\_en.jsp](http://www.codexalimentarius.net/web/index_en.jsp)

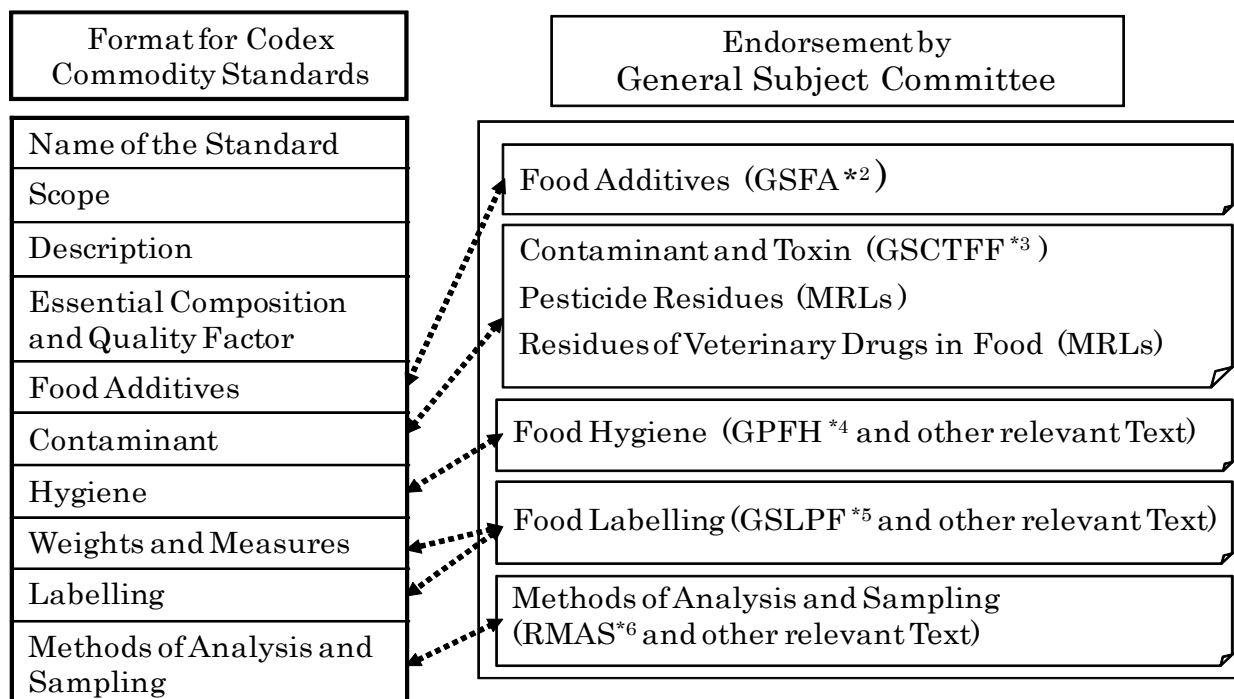
### 3.1.1 Elaboration of Codex Commodity Standards

Figure 3.1-1 shows relationship between Commodity Standards and General Standards in Codex.

Codex Alimentarius Commission has two types of functionally classified committees; Commodity Committees which deal with Commodity Standards, and General Subject Committees which deal with general subjects horizontally applied to overall foods. Standards developed by the Commodity Committee should be reviewed for overall foods and be approved by General Subject Committees.

For the format for commodity standards, requirements for description of items consisting standards, relations to General Subject Committees, method of elaboration of Commodity Standards is defined in detail in Codex Procedural Manual, 19<sup>th</sup> Edition<sup>2</sup>.

Elaboration of Codex Commodity Standards\*<sup>1</sup>



\*1 Procedural Manual : Section III Elaboration of Codex Standards and Related Text

\*2 Codex Stan 192-1955 General Standard for Food Additives

\*3 Codex Stan 193-1995 General Standard for Contaminants and Toxins in Foods and Feeds

\*4 CAC/RCP1-1969 General Principles of Food Hygiene

\*5 Codex Stan 1-1985 General Standards for the Labelling of Prepackaged Foods

\*6 Recommended Methods of Analysis and Sampling

Figure 3.1-1 Commodity Standards developed by Codex Alimentarius Commission

<sup>2</sup> [ftp://ftp.fao.org/codex/Publications/ProcManuals/Manual\\_19e.pdf](ftp://ftp.fao.org/codex/Publications/ProcManuals/Manual_19e.pdf)

### **3.1.2 Codex Commodity Standards**

As of July 2009, Codex Alimentarius Commission defined commodity standards for 200 food items presented in FY2009 Report Table 3.1-2.

FY2009 Report Table 3.1-2 is relatively inconvenient to overview the status of each standard against overall standards since standard numbers in the table were assigned generally according to the year of issued in the original version. On the other hand, ANNEX B in General Standards for Food Additives<sup>3</sup> (GSFA) presents Food Category System (FCS) which is used to develop standards for use of food additives and describes individual category items (FY2009 Report Table 3.1-3). ANNEX C provides cross-reference list between the FCS and developed commodity food standards (FY2009 Report Table 3.1-4). These are more useful to overview the overall standards.

### **3.1.3 Codex Methods of Analysis and Sampling**

There is Methods of Analysis and Sampling Committee in General Subject Committee in Codex Alimentarius Commission. The Committee's Terms of Reference in Codex are listed below:

- (1) To elaborate standards for methods of analysis and sampling suitable for food standards.
- (2) To function as an international coordinating organization for food standards.
- (3) To identify the generally applicable methods of analysis and sampling suitable for food standards.
- (4) To investigate, amend and approve the methods of analysis and sampling proposed by the Commodity Committee.
- (5) To organize the sampling methods and procedures as necessary.
- (6) To investigate problems with the specific methods of analysis and sampling presented to this Committee.
- (7) To elaborate evaluation procedures, protocol, guidelines or related documents for the Food Testing Organization System.

The methods of analysis and sampling that have so far been elaborated were compiled in the Recommendable Methods of Analysis and Sampling (CODEX STAN 234-1999<sup>4</sup>).

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<sup>3</sup> [http://www.codexalimentarius.net/gsfaonline/CXS\\_192e.pdf](http://www.codexalimentarius.net/gsfaonline/CXS_192e.pdf)

<sup>4</sup> [http://www.codexalimentarius.net/download/standards/388/CXS\\_234e.pdf](http://www.codexalimentarius.net/download/standards/388/CXS_234e.pdf)

RECOMMENDED METHODS OF ANALYSIS AND SAMPLING

CODEX STAN 234-1999<sup>1</sup>

PART A

METHODS OF ANALYSIS BY ALPHABETICAL ORDER OF COMMODITY CATEGORIES AND  
NAMES

PART B

METHODS OF SAMPLING BY ALPHABETICAL ORDER OF COMMODITY CATEGORIES  
AND NAMES

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All Foods

Cereals, Pulses and Legumes and Derived Products

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Natural Mineral Waters

Processed Fruits and Vegetables

Processed Meat and Poultry Products and Soups and Broths

Quick Frozen Fruits and Vegetables

Sugars and Honey

Miscellaneous Products

<sup>1</sup> The most updated version of the method should be used, in application of ISO/IEC 17025: 1999. The present list of methods reflects the amendments adopted by the 30<sup>th</sup> Session of the Codex Alimentarius Commission in 2007.

PART A  
METHODS OF ANALYSIS BY ALPHABETICAL ORDER OF COMMODITY CATEGORIES AND NAMES

<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
<b>All Foods</b>				
All foods	Acesulfame K, Aspartame	EN 12856 : 1999-04	High performance liquid chromatography	II
All foods	Cyclamate	EN 12857 : 1999-04	High performance liquid chromatography	II
All foods	Cyclamate	NMKL 123 (1998)	Spectrophotometry	III
All foods	Saccharin	EN 12856 : 1999-04	High performance liquid chromatography	III
All Foods (see also meat products)	Nitrates and/or Nitrites	EN 12014-1:1997-04	Part 1- General considerations	N/A
Individual Foods <sup>2</sup>	Sulphites	EN 1988-1 : 1998-02 AOAC 990.28	Part 1: Optimized Monier-Williams method	III
Individual Foods <sup>3</sup>	Sulphites	EN 1988-2:1998 -02 NMKL 135 (1990)	Part 2: Enzymatic method	III
<b>Cereals, Pulses and Legumes and Derived Products</b>				
Certain pulses	Moisture	ISO 665:1977 (confirmed 1995)	Gravimetry	I
Degermed maize (corn) meal and maize (corn) grits	Ash	AOAC 923.03 ISO 2171:1993 ICC Method No 104/1 (1990)	Gravimetry	I
Degermed maize (corn) meal and maize (corn) grits	Fat, crude	AOAC 945.38F; 920.39C	Gravimetry (ether extraction)	I
Degermed maize (corn) meal and maize (corn) grits	Moisture	ISO 712:1998 ICC Method No 110/1 (1986)	Gravimetry	I

<sup>2</sup> Hominy, fruit juice, sea food

<sup>3</sup> Wine, dried apples, lemon juice, potato flakes, sultanas, beer

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Degermed maize (corn) meal and maize (corn) grits	Particle size (granularity)	AOAC 965.22	Sieving	I
Degermed maize (corn) meal and maize (corn) grits	Protein	ICC Method No 105/1 (1986)	Titrimetry, Kjeldahl digestion	I
Durum wheat semolina and durum wheat flour	Ash (semolina)	AOAC 923.03 ISO 2171:1993	Gravimetry	I
Durum wheat semolina and durum wheat flour	Moisture	ISO 712:1998 ICC Method 110/1 (1986)	Gravimetry	I
Durum wheat semolina and durum wheat flour	Protein (N x 5.7)	ICC Method No 105/1	Titrimetry, Kjeldahl digestion	I
Instant Noodles	Extraction of oil from instant noodles	described in the standard	Gravimetry	I
Instant Noodles	Acid Value	described in the standard	Titrimetry	I
Instant Noodles	Moisture	described in the standard	Gravimetry	
Maize (corn)	Moisture	ISO 6540:1980 (confirmed 1994)	Gravimetry	I
Peanuts (raw)	Aflatoxins, total	AOAC 991.31	Immunoaffinity column (Aflatest)	II
Peanuts (raw)	Aflatoxins, total	AOAC 993.17	Thin layer chromatography	III
Peanuts (intended for further processing)	Aflatoxins, total	AOAC 975.36	Romer minicolumn	III
Peanuts (Cereals, shell-fruits and derived products ( including peanuts))	Sum of aflatoxins B <sub>1</sub> , B <sub>2</sub> , G <sub>1</sub> and G <sub>2</sub>	EN 12955 : 1999-07 ISO 16050:2003	HPLC with post column derivatization and immunoaffinity column clean up	III
Peanuts (intended for further processing)	Aflatoxins, total	AOAC 979.18	Holaday-Velasco minicolumn	III
Pearl millet flour	Ash	AOAC 923.03	Gravimetry	I
Pearl millet flour	Colour	Modern Cereal Chemistry, 6th Ed., D.W. Kent-Jones and A.J. Amos (Ed.), pp. 605-612, Food Trade Press Ltd, London, 1969.	Colorimetry using specific colour grader	IV

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Pearl millet flour	Fat, crude	AOAC 945.38F; 920.39C	Gravimetry (ether extraction)	I
Pearl millet flour	Fibre, crude	ISO 5498:1981 (B.5 Separation)	Gravimetry	I
Pearl millet flour	Moisture	ISO 712:1998 ICC Method No 110/1 (1986)	Gravimetry	I
Pearl millet flour	Protein	AOAC 920.87	Titrimetry, Kjeldahl digestion	I
Sorghum flour	Ash	AOAC 923.03 ISO 2171:1993 ICC Method No 104/1 (1990)	Gravimetry	I
Sorghum flour	Colour	<i>Modern Cereal Chemistry</i> , 6th Ed., D.W. Kent-Jones and A.J. Amos (Ed.), pp. 605-612, Food Trade Press Ltd, London, 1969.	Colorimetry using specific colour grader	IV
Sorghum flour	Fat, crude	AOAC 945.38F; 920.39C	Gravimetry (ether extraction)	I
Sorghum flour	Fibre, crude	ICC Method No 113 (1972) ISO 6541:1981 (confirmed 1996)	Gravimetry	I
Sorghum flour	Moisture	ISO 712:1998 ICC Method No 110/1 (1986)	Gravimetry	I
Sorghum flour	Particle size (granularity)	AOAC 965.22	Sieving	I
Sorghum flour	Protein	ICC Method No 105/1 (1986)	Titrimetry, Kjeldahl digestion	I
Sorghum flour	Tannins	ISO 9648:1988 (confirmed 1994)	Spectrophotometry	I
Sorghum grains	Ash	AOAC 923.03 ISO 2171:1993 ICC Method No 104/1 (1990)	Gravimetry	I
Sorghum grains	Fat, crude	AOAC 945.38F; 920.39C	Gravimetry (ether extraction)	I
Sorghum grains	Moisture	ISO 6540:1980 (confirmed 1994)	Gravimetry	I
Sorghum grains	Protein	ICC Method No 105/1 (1986)	Titrimetry, Kjeldahl digestion	I
Sorghum grains	Tannins	ISO 9648:1988 (confirmed 1994)	Spectrophotometry	I

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Soy protein products	Ash	AOAC 923.03 ISO 2171:1993 (Method B)	Gravimetry	I
Soy protein products	Fat	CAC/RM 55-1976 - Method 1	Gravimetry (extraction)	I
Soy protein products	Fibre, crude	ISO 5498:1981	Gravimetry	I
Soy protein products	Moisture	AOAC 925.09	Gravimetry (vacuum oven)	I
Soy protein products	Protein	AOAC 955.04D (using factor 6.25)	Titrimetry, Kjeldahl digestion	II
Vegetable protein products	Ash	AOAC 923.03 ISO 2171:1993 (Method B)	Gravimetry, Direct	I
Vegetable protein products	Fat	CAC/RM 55-1976 - Method 1	Gravimetry (extraction)	I
Vegetable protein products	Fibre, crude	AACC (1982) 32-17	Ceramic fiber filtration	I
Vegetable protein products	Moisture	AOAC 925.09	Gravimetry (vacuum oven)	I
Vegetable protein products	Protein	AOAC 955.04D (using factor 6.25)	Titrimetry, Kjeldahl digestion	II
Wheat flour	Ash	AOAC 923.03 ISO 2171:1993 ICC Method No 104/1 (1990)	Gravimetry	I
Wheat flour	Fat acidity	AOAC 939.05	Titrimetry	I
Wheat flour	Moisture	ISO 712:1998 ICC Method No 110/1 (1986)	Gravimetry	I
Wheat flour	Particle size (granularity)	AOAC 965.22	Sieving	I
Wheat flour	Protein	ICC Method No 105/1 (1986)	Titrimetry, Kjeldahl digestion	I
Wheat protein products including wheat gluten	Protein	Vital wheat gluten and devitalized wheat gluten AOAC 979.09 (wheat protein in grain Nx5.7)	Kjeldahl	I
		Solubilized wheat protein AOAC 920.87 (wheat protein in flour Nx5.7)	Kjeldahl	I

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Wheat protein products including Wheat gluten	Fibre, crude	AOAC 962.09	Ceramic fiber filtration	I
Wheat protein products including Wheat gluten	Ash	AOAC 923.03 ISO 2171:1980, method B	Gravimetry	I
Whole and decorticated pearl millet grains	Ash	AOAC 923.03	Gravimetry	I
Whole and decorticated pearl millet grains	Fat, crude	AOAC 945.38F; 920.39C	Gravimetry (ether extraction)	I
Whole and decorticated pearl millet grains	Fibre, crude	ISO 5498:1981 (B.5 Separation)	Gravimetry	I
Whole and decorticated pearl millet grains	Moisture	ISO 712:1998 ICC Method No 110/1 (1986)	Gravimetry	I
Whole and decorticated pearl millet grains	Protein	AOAC 920.87	Titrimetry, Kjeldahl digestion	I
Whole maize (corn) meal	Ash	AOAC 923.03 ISO 2171:1993 ICC Method No 104/1 (1990)	Gravimetry	I
Whole maize (corn) meal	Fat, crude	AOAC 945.38F; 920.39C	Gravimetry (ether extraction)	I
Whole maize (corn) meal	Moisture	ISO 712:1998 ICC Method No 110/1 (1986)	Gravimetry	I
Whole maize (corn) meal	Particle size (granularity)	AOAC 965.22	Sieving	I
Whole maize (corn) meal	Protein	ICC Method No 105/1 (1986)	Titrimetry, Kjeldahl digestion	I
<b>Cocoa Products and Chocolate</b>				
Chocolate and chocolate products				
Chocolate and chocolate products	Cocoa butter	AOAC 963.15 IOCCC 14-1972	Gravimetry (Soxhlet extraction)	I

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Chocolate and chocolate products	Fat-free cocoa solids	AOAC 931.05	Oven evaporation and factor	I
Chocolate and chocolate products	Fat-free milk solids	IOCCC 17-1973 or AOAC 939.02	Titrimetry, Kjeldahl digestion; after extraction of milk proteins	II
Chocolate and chocolate products	Fat, total	AOAC 963.15	Gravimetry (Soxhlet extraction)	I
Chocolate and chocolate products	Milkfat	IOCCC 5-1962 AOAC 945.34; 925.41B; 920.80	Titrimetry/Distillation	I
Chocolate and chocolate products	Moisture	IOCCC 26-1988 or AOAC 977.10 (Karl Fischer method); or AOAC 931.04 or IOCCC 1-1952	Gravimetry	I
Chocolate and chocolate products	Non-cocoa butter vegetable fat	AOCS Ce 10/02 and described in the Standard	Described in the Standard	I
Cocoa (Cacao) Mass or Cocoa/Chocolate Liquor, and Cocoa Cake	Cocoa shell	AOAC 968.10 and 970.23	Spiral vessel count, Stone cell count	I
Cocoa (Cacao) Mass or Cocoa/Chocolate Liquor, and Cocoa Cake	Fat	AOAC 963.15 or IOCCC 14 (1972)	Gravimetry (Soxhlet extraction)	I
Cocoa butter	Free fatty acids	ISO660:1996 amended 2003; or AOCS Cd 3d-63 (03)	Titrimetry	I
Cocoa butter	Unsaponifiable matter	ISO 3596:2000 or ISO 18609: 2000; or AOCS Ca 6b-53 (01)	Titrimetry after extraction with diethyl ether	I
Cocoa powders (cocoa) and dry cocoa-sugar mixtures	Moisture	IOCCC 26-1988 or AOAC 977.10 (Karl Fischer method)	Gravimetry	I
<b>Fats and Oils and Related Products</b>				
Fats and Oils (all)	Arsenic	AOAC 952.13 (Codex general method)	Colorimetry (diethyldithiocarbamate)	II
Fats and Oils (all)	Arsenic	AOAC 942.17 (Codex general method)	Colorimetry (molybdenum blue)	III
Fats and Oils (all)	Arsenic	AOAC 985.16 (Codex general method)	Atomic absorption spectrophotometry	III

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Fats and oils	Butylhydroxyanisole, butylhydroxytoluene, tert-butylhydroquinone, & propyl gallate	AOAC 983.15; or AOCS Ce-6-86	Liquid chromatography	II
Fats and Oils (all)	Insoluble impurities	ISO 663:2007	Gravimetry	I
Fats and Oils (all)	Lead	AOAC 994.02 ISO 12193:2004 (Codex general method) or AOCS Ca 18c-91 (03)	Atomic absorption spectrophotometry (direct graphite furnace)	II
Fats and Oils (all)	Matter volatile at 105°C	ISO 662:1998	Gravimetry (open-drying)	I
Fats and Oils (all)	Soap content	BS 684 Section 2.5; or AOCS Cc 17-95 (97)	Gravimetry	I
Fats and oils not covered by individual standards	Acid Value	ISO 660:1996; or AOCS Cd 3d-63 (03)	Titrimetry	I
Fats and oils not covered by individual standards	Copper and Iron	AOAC 990.05 ISO 8294:1994 or AOCS Ca 18b-91 (03) (Codex general method)	Atomic absorption Spectrophotometry (direct graphite furnace)	II
Fats and oils not covered by individual standards	Peroxide value	AOCS Cd 8b-90 ISO 3961:1996	Titrimetry using <i>iso</i> -octane	I
Fat spreads and blended spreads	Fat content	ISO 17189   IDF 194: 2003	Gravimetry	I
Named Animal Fats	Acidity	ISO 660:1996 amended 2003; or AOCS Cd 3d-63 (03)	Titrimetry	I
Named Animal Fats	GLC ranges of fatty acid composition	ISO 5508: 1990 and ISO 5509: 2000 or AOCS Ce 2-66 (97) and Ce 1e-91 (01) or Ce 1f-96 (02)	Gas chromatography of methyl esters	II

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Named Animal Fats	Copper and Iron	AOAC 990.05 ISO 8294:1994; or AOCS Ca 18b-91 (03) (Codex general method)	Atomic absorption Spectrophotometry (direct graphite furnace)	II
Named Animal Fats	Iodine value (IV)	ISO 3961: 1996; or AOAC 993.20; or AOCS Cd 1d-1992 (97)	Wijs-Titrimetry	I
Named Animal Fats	Peroxide value	AOCS Cd 8b-90 (97) ISO 3961:1996	Titrimetry using <i>iso</i> -octane	I
Named Animal Fats	Relative density	ISO/AOCS method for apparent density to be inserted	Pycnometry	II
Named Animal Fats	Refractive index	ISO 6320:2000; or AOCS Cc 7-25 (02)	Refractometry	II
Named Animal Fats	Saponification value	ISO 3657:2002; or AOCS Cd 3-25 (03)	Titrimetry	I
Named Animal Fats	Unsaponifiable matter	ISO 3596:2000 or ISO 18609: 2000; or AOCS Ca 6b-53 (01)	Titrimetry after extraction with diethyl ether	I
Named Animal Fats	Titre	ISO 935:1988; or AOCS Cc 12-59 (97)	Thermometry	I
Named Vegetable Oils	Acidity	ISO 660: 1996, amended 2003; or AOCS Cd 3d-63 (03)	Titrimetry	I
Named Vegetable Oils	Apparent density	ISO 6883: 2000, with the appropriate conversion factor; or AOCS Ce 10c-95 (02)	Pycnometry	I
Named Vegetable Oils	Baudouin test (modified Villavecchia or sesameseed oil test)	AOCS Cb 2-40 (97)	Colour reaction	I
Named Vegetable Oils	Carotenoids, total	BS 684 Section 2.20	Spectrophotometry	II
Named Vegetable Oils	Copper and iron	ISO 8294: 1994; or AOAC 990.05; or AOCS Ca 18b-91 (03)	AAS	II
Named Vegetable Oils	Crismer value	AOCS Cb 4-35 (97) and AOCS Ca 5a-40 (97)	Turbidity	I

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Named Vegetable Oils	GLC ranges of fatty acid composition	ISO 5508: 1990 and ISO 5509: 2000; or AOCS Ce 2-66 (97) and Ce 1e-91 (01) or Ce 1f-96 (02)	Gas chromatography of methyl esters	II
Named Vegetable Oils	Halphen test	AOCS Cb 1-25	Colorimetry	I
Named Vegetable Oils	Insoluble impurities	ISO 663: 2000	Gravimetry	I
Named Vegetable Oils	Iodine value (IV)	Wijs - ISO 3961: 1996; or AOAC 993.20; or AOCS Cd 1d-1992 (97); or NMKL 39 (2003)	Wijs-Titrimetry <sup>4</sup>	I
Named Vegetable Oils	Lead	AOAC 994.02; or ISO 12193: 2004; or AOCS Ca 18c-91 (03)	Atomic Absorption	II
Named Vegetable Oils	Moisture & volatile matter at 105°C	ISO 662: 1998	Gravimetry	I
Named Vegetable Oils	Peroxide value (PV)	AOCS Cd 8b-90 (03); or ISO 3960: 2001	Titrimetry	I
Named Vegetable Oils	Refractive index	ISO 6320: 2000; or AOCS Cc 7-25 (02)	Refractometry	II
Named Vegetable Oils	Reichert value and Polenske value	AOCS Cd 5-40 (97)	Titrimetry	I
Named Vegetable Oils	Relative density	IUPAC 2.101 with the appropriate conversion factor	Pycnometry	II
Named Vegetable Oils	Saponification value (SV)	ISO 3657: 2002; or AOCS Cd 3-25 (03)	Titrimetry	I
Named Vegetable Oils	Slip point	ISO 6321:2002 for all oils; AOCS Ce 3b-92 (02) for all oils except palm oils; AOCS Ce 3-25 (97) for palm oils only	Open ended capillary tube	I
Named Vegetable Oils	Soap content	BS 684 Section 2.5; or AOCS Cc 17-95 (97)	Gravimetry	I

<sup>4</sup> It is possible to calculate the Iodine Value from fatty acid composition data obtained by gas chromatography e.g. using AOCS Cd 1b-87 (97)

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Named Vegetable Oils	Sterol content	ISO 12228: 1999; or AOCS Ch 6-91 (97)	Gas chromatography	II
Named Vegetable Oils	Tocopherol content	ISO 9936: 1997; or AOCS Ce 8-89 (97)	HPLC	II
Named Vegetable Oils	Unsaponifiable matter	ISO 3596: 2000; or ISO 18609: 2000; or AOCS Ca 6b-53 (01)	Gravimetry	I
Olive Oils and Olive Pomace Oils	Absorbency in ultra-violet	COI/T.20/Doc. No. 19 or ISO 3656:2002 or AOCS Ch 5-91 (01).	Absorption in ultra violet	II
Olive Oils and Olive Pomace Oils	Acidity, free (acid value)	ISO 660:1996, amended 2003 or AOCS Cd 3d-63 (03)	Titrimetry	I
Olive Oils and Olive Pomace Oils	Alpha-tocopherol	ISO 9936:1997	HPLC	II
Olive Oils and Olive Pomace Oils	Difference between the actual and theoretical ECN 42 triglyceride content	COI/T.20/Doc. no. 20 or AOCS Ce 5b-89 (97)	Analysis of triglycerides of HPLC and calculation	I
Olive Oils and Olive Pomace Oils	Erythrodiol + uvaol content	IUPAC 2.431.	Gas chromatography	II
Olive Oils and Olive Pomace Oils	Fatty acids in the 2-position of the triglycerides	ISO 6800:1997 or AOCS Ch 3-91 (02)	Gas chromatography	I
Olive Oils and Olive Pomace Oils	Halogenated solvents, traces	COI/T.20/Doc. no. 8.	Gas chromatography	II
Olive Oils and Olive Pomace Oils	Insoluble impurities in light petroleum	ISO 663:2000	Gravimetry	I
Olive Oils and Olive Pomace Oils	Iodine value	ISO 3961:1996 or AOAC 993.20 or AOCS Cd 1d-92 (97) or NMKL 39 (2003)	Wijs-Titrimetry	I
Olive Oils and Olive Pomace Oils	Iron and copper	ISO 8294:1994 or AOAC 990.05	AAS	II
Olive Oils and Olive Pomace Oils	Lead	AOAC 994.02 or ISO 12193:2004 or AOCS Ca 18c-91(97)	AAS	II
Olive Oils and Olive Pomace Oils	Moisture and volatile matter	ISO 662:1998	Gravimetry	I
Olive Oils and Olive Pomace Oils	Organoleptic characteristics	COI/T.20/Doc. no. 15.	Panel test	I
Olive Oils and Olive Pomace Oils	Peroxide value	ISO 3960:2001 or AOCS Cd 8b-90 (03).	Titrimetry	I

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Olive Oils and Olive Pomace Oils	Relative density	IUPAC 2.101, with the appropriate conversion factor	Pycnometry	I
Olive Oils and Olive Pomace Oils	Refractive index	ISO 6320:2000 or AOCS Cc 7-25 (02)	Refractometry	II
Olive Oils and Olive Pomace Oils	Saponification value	ISO 3657:2002 or AOCS Cd 3-25 (03)	Titrimetry	I
Olive Oils and Olive Pomace Oils	Sterol composition and total sterols	COI/T.20/Doc. no. 10 or ISO 12228:1999 or AOCS Ch 6-91 (97)	Gas chromatography	II
Olive Oils and Olive Pomace Oils	Stigmastadienes	COI/T.20/Doc. no. 11 or ISO 15788-1:1999 or AOCS Cd 26-96 (03)	Gas chromatography	II
Olive Oils and Olive Pomace Oils	Stigmastadienes	ISO 15788-2: 2003	HPLC	III
Olive Oils and Olive Pomace Oils	<i>Trans</i> fatty acids content	COI/T.20/Doc no. 17 or ISO 15304:2002 or AOCS Ce 1f-96 (02)	Gas chromatography of methyl esters	II
Olive Oils and Olive Pomace Oils	Unsatifiable matter	ISO 3596:2000 or ISO 18609:2000 or AOCS Ca 6b-53 (01)	Gravimetry	I
Olive Oils and Olive Pomace Oils	Wax content	COI/T.20/Doc. no. 18 or AOCS Ch 8-02 (02)	Gas chromatography	II
Margarine	Fat	IUPAC 2.801	Gravimetry	I
Margarine	Milkfat	CAC/RM 15-1969	Titrimetry	I
Margarine	Sodium chloride	AOAC 971.27 (Codex general method)	Potentiometry	II
Margarine	Vitamin A	AOAC 960.45	Spectrophotometry	II
Margarine	Vitamin D	AOAC 936.14	Bioassay	II
Margarine	Vitamin E	IUPAC 2.411	TLC followed by spectrophotometry or GLC	II
Margarine	Water	CAC/RM 17-1969 (described in the Standard)	Gravimetry	I
Minarine	Fat	IUPAC 2.801	Gravimetry	I
Minarine	Milkfat	CAC/RM 15-1969 (described in the Standard)	Titrimetry	I
Minarine	Sodium chloride	AOAC 971.27 (Codex general method)	Potentiometry	II

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Minarine	Vitamin A	AOAC 960.45	Spectrophotometry	II
Minarine	Vitamin D	AOAC 936.14	Bioassay	II
Minarine	Vitamin E	IUPAC 2.411	TLC followed by spectrophotometry or GLC	II
Minarine	Water	CAC/RM 17-1969	Gravimetry	I
<b>Fish and Fishery Products</b>				
Fish and fishery products	Histamine	AOAC 977.13	Fluorimetry	II
Fish and fishery products	Mercury	AOAC 977.15	Flameless atomic absorption spectrophotometry	III
Fish and fishery products: canned products	Drained weight	Described in the Standard	Weighing	I
Fish and fishery products: canned products	Net weight	Described in the Standard	Weighing	I
Boiled Dried Salted Anchovies	Sodium Chloride (chloride expressed as sodium chloride)	AOAC 937.09	Titrimetry	II
Canned shrimps or prawns	Size, determination of	Described in the Standard	Number per 100 g	I
Frozen fish and fishery products	Thawing and cooking procedures	Described in the Standards	Thawing and heating	I
Quick frozen blocks of fish fillet, minced fish flesh and mixtures of fillets and minced fish flesh	Proportion of fish fillet and minced fish	AOAC 988.09	Physical separation	I
Quick frozen blocks of fish fillet, minced fish flesh and mixtures of fillets and minced fish flesh	Net content of frozen fish blocks covered by glaze	Described in the Standard	Gravimetry	I
Quick frozen blocks of fish fillet, minced fish flesh and mixtures of fillets and minced fish flesh	Sodium chloride	AOAC 971.21 (Codex general method)	Potentiometry	II

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Quick frozen fish fillets	Net weight of products covered by glaze	Described in the Standard	Water spraying and sieving	I
Quick Frozen Fish sticks (fish fingers) and fish portions - breaded or in batter	Fish content (declaration)	AOAC 996.15 and calculation (described in the standard)	Gravimetry	I
Quick frozen fish sticks (fish fingers) and fish portions - breaded or in batter	Net weight	Described in the Standard	Weighing	I
Quick Frozen Fish Sticks (fish fingers) and Fish Portions-Breaded and in Batter (except for certain fish species with soft flesh)	Proportion of fish fillet and minced fish	WEFTA Method (described in the Standard)	Gravimetry	I
Quick frozen fish sticks (fish fingers) and fish portions - breaded or in batter	Sodium chloride	AOAC 971.27 (Codex general method)	Potentiometry	II
Salted Atlantic Herring and Salted Sprat	Water content	AOAC 950.46B	air drying	I
Salted Fish of the <i>Gadidae</i> Family	Salt	WEFTA Method	Titrimetry (Mohr) Salt determined as chloride expressed as sodium chloride	II
Salted Fish and Dried Salted Fish of the <i>Gadidae</i> Family of Fishes	Salt Content Water content	Sampling and method described in the Standard	Gravimetry	I
<b>Foods for Special Dietary Uses</b>				
Special foods	Ash	AOAC 942.05	Gravimetry	I
Special foods	Calcium	AOAC 984.27	ICP emission spectrometry	III
Special foods	Calories by calculation	Method described in CAC/VOL IX-Ed.1, Part III	Calculation method	III
Special foods	Carbohydrates	Method described in CAC/VOL IX-Ed.1, Part III	Calculation	III
Special foods	Chloride	AOAC 971.27 (Codex general method)	Potentiometry	II
Special foods	Dietary fibre, total	AOAC 985.29	Gravimetry (enzymatic digestion)	I

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Special foods	Fat	CAC/RM 55-1976	Gravimetry (extraction)	I
Special foods	Fat in foods not containing starch, meat or vegetable products	CAC/RM 1-1973, B-2	Gravimetry	I
Special foods	Fill of containers	CAC/RM 46-1972	Weighing	I
Special foods	Folic acid	AOAC 944.12	Microbioassay	II
Special foods	Linoleate (in the form of glycerides)	AOAC 922.06; 969.33; 963.22	Acid hydrolysis, preparation of methyl esters and gas chromatography	II
Special foods	Linoleate (in the form of glycerides)	AOAC 922.06; 979.19	Acid hydrolysis and spectrophotometry	III
Special foods	Loss on drying	AOAC 934.01 AOAC 925.23	Gravimetry	I
Special foods	Loss on drying (milk based)	AOAC 925.23 IDF Standard 21B:1987 ISO 6731:1989	Gravimetry	I
Special foods	Nicotinamide for foods not based on milk	AOAC 961.14	Colorimetry	II
Special foods	Nicotinamide for milk-based foods	AOAC 944.13	Microbioassay	II
Special foods	Pantothenic acid/enriched foods	AOAC 945.74	Microbioassay	II
Special foods	Pantothenic acid/non-enriched foods	<i>The Analyst</i> 89 (1964):1, 3-6, <i>ibid.</i> 232 US Dept Agr., <i>Agr. Handbook</i> 97 (1965)	Microbioassay	IV
Special foods	Phosphorous	AOAC 986.24	Colorimetry (molybdovanadate)	II
Special foods	Protein efficiency ratio (PER)	AOAC 960.48	Rat bioassay	I
Special foods	Protein, crude	Method described in CAC/VOL IX-Ed. 1, Part III	Titrimetry, Kjeldahl digestion	I

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Special foods	Riboflavin	AOAC 970.65	Fluorometry	II
Special foods	Sodium and potassium	ISO 8070:1987 (confirmed 1992) IDF Standard 119A:1987	Flame emission spectrophotometry	II
Special foods	Sodium and potassium	AOAC 984.27	ICP emission spectrometry	III
Special foods	Thiamine	AOAC 942.23	Fluorometry	II
Special foods	Vitamin A	AOAC 974.29	Colorimetry	IV
Special foods	Vitamin A in foods in which carotenes have been added as a source of vitamin A	AOAC 941.15	Spectrophotometry	III
Special foods	Vitamin B <sub>12</sub>	AOAC 952.20	Microbioassay	II
Special foods	Vitamin B <sub>6</sub>	AOAC 961.15	Microbioassay	II
Special foods	Vitamin C	AOAC 967.22	Microfluorometry	II
Special foods	Vitamin C	AOAC 967.21	Colorimetry (dichloroindophenol)	III
Special foods	Vitamin D	AOAC 936.14	Rat bioassay	IV
Special foods	Vitamin E	AOAC 971.30	Colorimetry	IV
Foods with low-sodium content (including salt substitutes)	Iodine	AOAC 925.56	Titrimetry	II
Foods with low-sodium content (including salt substitutes)	Silica (colloidal, calcium silicate)	AOAC 950.85N	Gravimetry	IV
Follow-up formula	Dietary fibre, total	AOAC 991.43	Gravimetry (enzymatic digestion)	I
Follow-up formula	Iodine (milk based formula)	AOAC 992.24	Ion-selective potentiometry	II
Follow-up formula	Pantothenic acid	AOAC 992.07	Microbioassay	II
Follow-up formula	Pantothenic acid	<i>The Analyst</i> 89 (1964)(1) 3-6, 232 US Dept Agr., <i>Agr. Handbook</i> 97 (1965)	Microbioassay	IV
Follow-up formula	Vitamin A	AOAC 974.29	Colorimetry	IV
Follow-up formula	Vitamin A (retinol isomers)	AOAC 992.04	Liquid chromatography	II

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Follow-up formula	Vitamin A (retinol)	AOAC 992.06	Liquid chromatography	II
Follow-up formula	Vitamin K <sub>1</sub>	AOAC 992.27	Liquid chromatography	II
<b>Fruit Juices and Nectars</b>				
Fruit Juices and Nectars	Ascorbic acid-L (additives)	IFU Method No 17a (1995)	HPLC	II
Fruit Juices and Nectars	Ascorbic acid-L (additives)	ISO 6557-1: 1986	Fluorescence spectrometry	IV
Fruit Juices and Nectars	Ascorbic acid-L (additives)	AOAC 967.21 IFU Method No 17 ISO 6557-2: 1984	Indophenol method	III
Fruit Juices and Nectars	Carbon dioxide (additives and processing aids)	IFU Method No 42 (1976)	Titrimetry (back-titration after precipitation)	IV
Fruit Juices and Nectars	Cellobiose	IFU Recommendation No.4 October 2000	Capillary gas chromatography	IV
Fruit Juices and Nectars	Citric acid <sup>5</sup> (additives)	AOAC 986.13	HPLC	II
Fruit Juices and Nectars	Citric acid <sup>5</sup> (additives)	EN 1137: 1994 IFU Method No 22 (1985)	Enzymatic determination	III
Fruit Juices and Nectars	Glucose and fructose (permitted ingredients)	EN 12630 IFU Method No 67 (1996) NMKL 148 (1993)	HPLC	III
Fruit Juices and Nectars	Glucose-D and fructose-D (permitted ingredients)	EN 1140 IFU Method No 55 (1985)	Enzymatic determination	II
Fruit Juices and Nectars	HFCS & HIS in apple juice (permitted ingredients)	Determination of HFCS & HIS by Capillary GC method JAOAC 84, 486 (2001)	CAP GC Method	IV
Fruit Juices and Nectars	Malic acid (additives)	AOAC 993.05	Enzymatic determination and HPLC	III
Fruit Juices and Nectars	Malic acid-D	EN 12138 IFU Method No 64 (1995)	Enzymatic determination	II
Fruit Juices and Nectars	Malic acid-D in apple juice	AOAC 995.06	HPLC	II

<sup>5</sup> All juices except citrus based juices

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Fruit Juices and Nectars	Malic acid-L	EN 1138 (1994) IFU Method No 21 (1985)	Enzymatic determination	II
Fruit Juices and Nectars	Pectin (additives)	IFU Method No 26 (1964/1996)	Precipitation/photometry	I
Fruit Juices and Nectars	Benzoic acid and its salts; sorbic acid and its salts	IFU Method No 63 (1995) NMKL 124 (1997)	HPLC	II
Fruit Juices and Nectars	Benzoic acid and its salts	ISO 5518:1978 ISO 6560: 1983	Spectrometry	III
Fruit Juices and Nectars	Preservatives in fruit juices (sorbic acid and its salts)	ISO 5519: 1978	Spectrometry	III
Fruit Juices and Nectars	Quinic, malic & citric acid in cranberry juice cocktail and apple juice (permitted ingredients and additives)	Determination of quinic, malic and citric acid in cranberry juice cocktail and apple juice AOAC 986.13	HPLC	III
Fruit Juices and Nectars	Saccharin	NMKL 122 (1997)	Liquid chromatography	II
Fruit Juices and Nectars	Soluble solids	AOAC 983.17 EN 12143 (1996) IFU Method No 8 (1991) ISO 2173: 2003	Indirect by refractometry	I
Fruit Juices and Nectars	Sucrose (permitted ingredients)	EN 12146 (1996) IFU Method No 56 (1985/1998)	Enzymatic determination	III
Fruit Juices and Nectars	Sucrose (permitted ingredients)	EN 12630 IFU Method No 67 (1996) NMKL 148 (1993)	HPLC	II
Fruit Juices and Nectars	Sulphur dioxide (additives)	Optimized Monier Williams; AOAC 990.28 IFU method No. 7A (2000) NMKL 132 (1989)	Titrimetry after distillation	II
Fruit Juices and Nectars	Sulphur dioxide (additives)	NMKL 135 (1990)	Enzymatic determination	III
Fruit Juices and Nectars	Sulphur dioxide (additives)	ISO 5522:1981 ISO 5523:1981	Titrimetry after distillation	III
Fruit Juices and Nectars	Tartaric acid in grape juice (additives)	EN 12137 (1997) IFU Method No 65 (1995)	HPLC	II

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<i>Commodity Standard</i>	<i>Provision</i>	<i>Method</i>	<i>Principle</i>	<i>Type</i>
Fruit Juices and Nectars	Total nitrogen	EN 12135 (1997) IFU Method No 28 (1991)	Digestion/titration	I
Fruit Juices and Nectars	Sections 3.2 Quality Criteria and 3.3 Authenticity <sup>6</sup>	Determination of acetic acid EN 12632; IFU Method No 66 (1996)	Enzymatic determination	II
Fruit Juices and Nectars		Determination of alcohol (ethanol) IFU Method No 52 (1996)	Enzymatic determination	II
Fruit Juices and Nectars		Detection of anthocyanins IFU Method No 71 (1998)	HPLC	I
		Determination of ash in fruit products AOAC 940.26 ;EN 1135 (1994); IFU Method No 9 (1989)	Gravimetry	I
		Detection of beet sugar in fruit juices AOAC 995.17	Deuterium NMR	II
		Determination of benzoic acid as a marker in orange juice AOAC 994.11	HPLC	III
		Determination of C <sup>13</sup> /C <sup>12</sup> ratio of ethanol derived from fruit juices JAOAC 79, No. 1, 1996, 62-72	Stable isotope mass spectrometry	II
		Determination of carbon stable isotope ratio of apple juice AOAC 981.09 - JAOAC 64, 85 (1981)	Stable isotope mass spectrometry	II
		Determination of carbon stable isotope ratio of orange juice AOAC 982.21	Stable isotope mass spectrometry	II

#### <sup>6</sup> 3.4 Verification of Composition, Quality and Authenticity

Fruit juices and nectars should be subject to testing for authenticity, composition, and quality where applicable and where required. The analytical methods used should be those found in Section 9, Methods of Analysis and Sampling.

The verification of a sample's authenticity / quality can be assessed by comparison of data for the sample, generated using appropriate methods included in the standard, with that produced for fruit of the same type and from the same region, allowing for natural variations, seasonal changes and for variations occurring due to processing.

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Determination of carotenoid, total/individual groups EN 12136 (1997); IFU Method No 59 (1991)	Spectrophotometry	I
Determination of centrifugable pulp EN 12134 (1997) - IFU Method No 60 (1991)	Centrifugation/% value	I
Determination of chloride (expressed as sodium chloride) EN12133 (1997) IFU Method No 37 (1991)	Electrochemical titrimetry	III
Determination of chloride in vegetable juice AOAC 971.27 (Codex general method) ISO 3634:1979	Titration	II
Determination of essential oils (Scott titration) AOAC 968.20 - IFU 45b*	(Scott) distillation, titration	I
Determination of essential oils (in citrus fruit) (volume determination)* ISO 1955:1982	Distillation and direct reading of the volume determination	I
Determination of fermentability IFU Method No 18 (1974)	Microbiological method	I
Determination of formol number EN 1133 (1994) IFU Method No 30 (1984)	Potentiometric titration	I
Determination of free amino acids EN 12742 (xxxxx) IFU Method No 57 (1989)	Liquid Chromatography	II
Determination of fumaric acid IFU Method No 72 (1998)	HPLC	II
Determination of glucose fructose and saccharose EN 12630 - IFU Method No 67 (1996) NMKL 148 (1993)	HPLC	II
Determination of gluconic acid IFU Method No 76 (2001)	Enzymatic determination	II

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Determination of glycerol IFU Method No 77 (2001)	Enzymatic determination	II
Determination of hesperidin and naringin EN 12148 (1996) - IFU Method No 58 (1991)	HPLC	II
Determination of hydroxymethylfurfural IFU Method No 69 (1996)	HPLC	II
Determination of hydroxymethylfurfural ISO 7466:1986	Spectrometry	III
Determination of isocitric acid-D IFU Method No 54 (1984)	Enzymatic determination	II
Determination of Lactic acid- D and L EN 12631 (1999) IFU Method No 53 (1983/1996)	Enzymatic determination	II
Determination of L-malic/total malic acid ratio in apple juice AOAC 993.05	Enzymatic determination and HPLC	II
Determination of naringin and neohesperidin in orange juice AOAC 999.05	HPLC	III
Determination of pH-value NMKL 179:2005 EN 1132 (1994);IFU Method No 11 (1989);ISO 1842: 1991	Potentiometry	II
Determination of phosphorus/phosphate EN 1136 (1994) IFU Method No 50 (1983)	Photometric determination	II
Determination of proline by photometry – non-specific determination EN 1141 (1994); IFU Method No 49 (1983)	Photometry	I
Determination of relative density EN 1131 (1993); IFU Method No 1 (1989) & IFU Method No General sheet (1971)	Pycnometry	II
Determination of Relative density IFU Method No 1A	Densitometry	III

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		Determination of sodium, potassium, calcium, magnesium in fruit juices EN 1134 (1994); IFU Method No 33 (1984)	Atomic Absorption Spectroscopy	II
		Determination of sorbitol-D IFU Method No 62 (1995)	Enzymatic determination	II
		Determination of stable carbon isotope ratio in the pulp of fruit juices ENV 13070 (1998) Analytica Chimica Acta 340 (1997)	Stable isotope mass spectrometry	II
		Determination of stable carbon isotope ratio of sugars from fruit juices ENV 12140 Analytica Chimica Acta 271 (1993)	Stable isotope mass spectrometry	II
		Determination of stable hydrogen isotope ratio of water from fruit juices ENV 12142 (1997)	Stable isotope mass spectrometry	II
		Determination of stable oxygen isotope ratio in fruit juice water ENV 12141 (1997)	Stable isotope mass spectrometry	II
		Detection of starch AOAC 925.38 (1925) IFU Method No 73 (2000)	Colorimetric	I
		Determination of sugar beet derived syrups in frozen concentrated orange juice $\delta^{18}\text{O}$ Measurements in Water AOAC 992.09	Oxygen isotope ratio analysis	I
		Determination of titrable acids, total EN 12147 (1995) IFU Method No Method No 3, (1968) ISO 750:1998	Titrimetry	I
		Determination of total dry matter (vacuum-oven drying at 70°C)* EN 12145 (1996) IFU Method No 61 (1991)	Gravimetric determination	I
		Determination of total solids (Microwave oven drying)* AOAC 985.26	Gravimetric determination	I

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		Determination of Vitamin C (dehydro-ascorbic acid and ascorbic acid) AOAC 967.22	Microfluorometry	III
		Determination of Vitamin C EN 14130 : 2004	HPLC	II

\* Because there is no numerical value in the Standard duplicate Type I methods have been included which may lead to different results.

#### Milk and Milk Products

Milk products	Iron	NMKL 139 (1991) (Codex general method)	Atomic absorption spectrophotometry	II
Milk products	Iron	IDF Standard 103A:1986 ISO 6732:1985	Photometry (bathophenanthroline)	IV
Milk products (products not completely soluble in ammonia)	Milkfat	IDF 124:3   ISO 8262-3:2005	Gravimetry (Weibull-Berntrop)	I
Blend of evaporated skimmed milk and vegetable fat	Total fat	IDF 13C:1987   ISO 1737:1999	Gravimetry (Röse-Gottlieb)	IV
Blend of evaporated skimmed milk and vegetable fat	Milk solids-not-fat* (MSNF)	IDF 21B:1987   ISO 6731:1989 IDF 13C:1987   ISO 1737:1999	Calculation from total solids content and fat content Gravimetry (Röse-Gottlieb)	IV
Blend of evaporated skimmed milk and vegetable fat	Milk protein in MSNF*	IDF 20-part 1 or 2:2001   ISO 8968-part 1 or 2:2001	Titrimetry (Kjeldahl)	IV
Reduced fat blend of evaporated skimmed milk and vegetable fat	Total fat	IDF 13C:1987   ISO 1737: 1999	Gravimetry (Röse-Gottlieb)	IV
Reduced fat blend of evaporated skimmed milk and vegetable fat	MSNF*	IDF 21B:1987   ISO 6731:1989 IDF 13C:1987   ISO1737:1999	Calculation from total solids and fat contents	IV

\* Milk total solids and Milk solids-not-fat content include water of crystallization of lactose

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Reduced fat blend of Evaporated skimmed milk and vegetable fat	Milk protein in MSNF*	IDF 20-1 or 2:2001   ISO 8968-1 or 2:2001	Titrimetry (Kjeldahl)	IV
Blend of skimmed milk and vegetable fat in powdered form	Total fat	IDF 9C:1987   ISO 1736:2000	Gravimetry (Röse-Gottlieb)	IV
Blend of skimmed milk and vegetable fat in powdered form	Water**	IDF 26:2004   ISO 5537:2004	Gravimetry, drying at 87°C	IV
Blend of skimmed milk and vegetable fat in powdered form	Milk protein in MSNF*	IDF 20-part 1 or part 2:2001   ISO 8968-part 1 or part 2:2001	Titrimetry (Kjeldahl)	IV
Reduced fat blend of skimmed milk powder and vegetable fat in powdered form	Total fat	IDF 9C:1987   ISO 1736:2000	Gravimetry (Röse-Gottlieb)	IV
Reduced fat blend of skimmed milk powder and vegetable fat in powdered form	Water**	IDF 26:2004   ISO 5537:2004	Gravimetry, drying at 87°C	IV
Reduced fat blend of skimmed milk powder and vegetable fat in powdered form	Milk protein in MSNF*	IDF 20-part 1 or part 2:2001   ISO 8968-part 1 or part 2:2001	Titrimetry (Kjeldahl)	IV
Blend of sweetened condensed skimmed milk and vegetable fat	Total fat	IDF 13C:1987   ISO 1737:1999	Gravimetry (Röse-Gottlieb)	IV
Blend of sweetened condensed skimmed milk and vegetable fat	Milk solids-not-fat* (MSNF)	IDF 15B:1991   ISO 6734:1989   IDF 13C:1987   ISO 1737:1999	Calculation from total solids content and fat content Gravimetry (Röse-Gottlieb)	IV

\* Milk total solids and Milk solids-not-fat content including water of crystallization of lactose  
\*\* Water content excluding the crystallized water bound to lactose (in fact to read moisture content)

\*Milk total solids and Milk solids-not-fat content include water of crystallization of lactose

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Blend of sweetened condensed skimmed milk and vegetable fat	Milk protein in MSNF*	IDF 20-part 1 or part 2:2001   ISO 8968-part 1 or part 2:2001	Titrimetry (Kjeldahl)	IV
Reduced fat blend of sweetened condensed skimmed milk and vegetable fat	Total fat ≤= 8% m/m ≥= 1% m/m	IDF 13C:1987   ISO 1737:1999	Gravimetry (Röse-Gottlieb)	IV
Reduced fat blend of sweetened condensed skimmed milk and vegetable fat	MSNF* ≥= 20% m/m	IDF 15B:1991   ISO 6734:1989   IDF 13:1987   ISO 1737:1999	Calculation from total solids and fat contents	IV
Reduced fat blend of sweetened condensed skimmed milk and vegetable fat	Milk protein in MSNF*	IDF 20-part 1 or part 2:2001   ISO 8968-part 1 or part 2:2001	Titrimetry (Kjeldahl)	IV
Butter	Copper	IDF Standard 5738:1980/AOAC 960.40	Photometry, diethylthiocarbamate	II
Butter	Lead	AOAC 972.25 (Codex general method)	Atomic absorption spectrophotometry	II
Butter	Milk solids-not-fat	IDF 80-2   ISO 3727-2:2001	Gravimetry	I
Butter	Milkfat	IDF 80-3   ISO 3727-3:2003	Gravimetry	I
Butter	Salt	IDF 12   ISO 1738:2004	Titrimetry (Mohr: determination of chloride, expressed as sodium chloride)	II
Butter	Salt	IDF 179   ISO 15648:2004	Potentiometry (determination of chloride, expressed as sodium chloride)	III
Butter	Vegetable fat	ISO 17670 / IDF 202	Gas liquid chromatography	II
Butter	Vegetable fat	IDF Standard 32:1965 ISO 3595:1976 (confirmed 1996) AOAC 955.34A	Phytosterol acetate test	III
Butter	Water	IDF 80   ISO 37271:2001	Gravimetry	I
Cheese	Citric acid	IDF RM 34   ISO TS 2963:2006	Enzymatic method	II

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Cheese	Citric acid	ISO 2963:1997 AOAC 976.15	Photometry	III
Cheese	Milkfat	IDF 5   ISO 1735:2004	Gravimetry (Schmid-Bondzynski-Ratslaff)	I
Cheese	Moisture	IDF Standard 4A:1982 ISO 5534:1985	Gravimetry, drying at 102 °C	I
Cheese (and cheese rind)	Natamycin	IDF Standard 140A:1992 ISO 9223:1991	Molecular absorption spectrophotometry & HPLC after extraction	II
Cheeses, individual	Milkfat in dry matter	IDF 5:2004   ISO 1735:2004	Gravimetry after solvent extraction	I
Cheeses, individual	Dry matter (Total solids)	ISO 5534/IDF 4: 2004	Gravimetry, drying at 102°C	I
Cheeses in brine	Milkfat in dry matter (FDM)	IDF 5   ISO 1735:2004	Gravimetry (Schmid-Bondzynski-Ratslaff)	I
Cottage cheese	Fat-free dry matter	IDF 4:2004   ISO 5534:2004	Gravimetry, drying at 102°C Calculation from dry matter and fat contents	IV
	Milkfat	IDF 5:2004   ISO 1735:2004	Gravimetry (Schmid-Bondzynski-Ratslaff)	IV
Cottage cheese		IDF 124-3:2005   ISO 8262-3:2005	Gravimetry (Weibull-Berntrop)	
Cottage cheese	Milk fat in dry matter	IDF 126A:1988 ISO 8262-3:1987	Gravimetry (Weibull-Berntrop)	I
Cheese, Unripened Including Fresh Cheese	Protein	IDF Standard 20B:1993 AOAC 991.20-23 ISO 8968 Part I	Titrimetry, Kjeldahl	I
Cream and Prepared Creams	Milk protein	ISO 8968-1 /IDF20-1:2001 AOAC 991.20	Titrimetry (Kjeldahl)	I
Cream	Milkfat	IDF Standard 16C:1987 ISO 2450:1999	Gravimetry (Röse-Gottlieb)	I

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Cream	Solids	IDF Standard 21B:1987 ISO 6731:1989	Gravimetry (drying at 102°C)	I
Creams Lowered in Milkfat Content	Milkfat	IDF Standard 16C:1987 ISO 2450:1999 AOAC 995.19	Gravimetry	I
Creams, Whipped Creams and Fermented Creams	Milk solids-not-fat	IDF Standard 80:1977 ISO 3727:1977 AOAC 920.116	Gravimetry	I
Cream cheese	Dry matter	IDF 4:2004   ISO 5534:2004	Gravimetry drying at 102°C	IV
Cream cheese	Moisture on fat free basis	IDF 4:2004   ISO 5534:2004 and IDF 5:2004   ISO 1735:2004	Calculation from fat content and moisture content	IV
Dairy fat spreads	Total fat	IDF 194:2003   ISO 17189:2003	Gravimetry Direct determination of fat using solvent extraction	I
Dairy fat spreads	Vegetable fat	IDF 54:1970   ISO 3594: 1976	Gas liquid chromatography	II
		IDF 32:1965   ISO 3595:1976	Phytosterol acetate test	III
Edible casein products	Acids, free	IDF Standard 91:1979 ISO 5547:1978	Titrimetry (aqueous extract)	IV
Edible casein products	Ash (including P <sub>2</sub> O <sub>5</sub> )	IDF Standard 90:1979) ISO 5545:1978	Furnace, 825°C	IV
Edible Casein Products	Casein in protein	IDF Standard 29:1964	Titrimetry, Kjeldahl	I
Edible casein products	Copper	AOAC 985.35	Atomic absorption spectrophotometry	II
Edible casein products	Copper	IDF 76   ISO 5738:2004	Colorimetry (diethyldithiocarbamate)	III
Edible casein products	Lactose	IDF 106   ISO 5548:2004	Photometry (phenol and H <sub>2</sub> SO <sub>4</sub> )	IV
Edible casein products	Lead	AOAC 972.25 (Codex general method)	Atomic absorption spectrophotometry	II

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Edible casein products	Lead	AOAC 982.23 (Codex general method)	Anodic stripping voltammetry	III
Edible casein products	Lead	IDF RM 133   ISO TS 6733: 2006	Spectrophotometry (1,5-diphenylthiocarbazone)	III
Edible casein products	Lead	NMKL 139 (1991) (Codex general method)	Atomic absorption spectrophotometry	III
Edible casein products	Milkfat	ISO 5543   IDF 127: 2004	Gravimetry (Schmid-Bondzynski-Ratslaff)	I
Edible casein products	Moisture	IDF 78   ISO 5550:2006	Gravimetry (drying at 102°C)	I
Edible casein products	pH	IDF Standard 115A:1989 ISO 5546:1979	Electrometry	IV
Edible casein products	Protein (total N x 6.38 in dry matter)	IDF Standard 92:1979 ISO 5549:1978	Titrimetry, Kjeldahl digestion	IV
Edible casein products	Sediment (scorched particles)	IDF 107   ISO 5739:2003	Visual comparison with standard disks, after filtration	IV
Emmental	Calcium => 800mg/100g	ISO 8070   IDF 119 <sup>7</sup>	Flame atomic absorption	IV
Evaporated milks	Milkfat	IDF Standard 13C: 1987 ISO 1737:1999	Gravimetry (Röse-Gottlieb)	I
Evaporated Milks	Protein	AOAC 945.48H AOAC 991.20 – IDF 20B:1993	Kjeldahl, titrimetry	I
Evaporated milks	Solids, total	IDF Standard 21B:1987 ISO 6731:1989	Gravimetry (drying at 102°C)	I
Fermented milks	Protein	ISO 8968-1   IDF 20-1:2001 AOAC 991.20	Titrimetry (Kjeldahl)	I
Fermented milks	Milk fat	ISO 1211:1999 IDF 1D:1996 AOAC 905.02	Gravimetry	I
Fermented milks	Lactic acid (total acidity expressed as lactic acid)	IDF 150:1991 ISO 11869:1997	Potentiometry, titration to pH 8.30	I

<sup>7</sup> Draft international standard

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	Microorganisms constituting the starter culture	IDF 149A:1997 (Annex A)	Colony count at 25°C, 30°C, 37°C and 45°C according to the starter organism in question	IV
Milk powders and cream powders	Milkfat	IDF Standard 9C: 1987 ISO 1736:2000	Gravimetry (Röse-Gottlieb)	I
Milk powders and cream powders	Protein (in milk solids-not-fat)	IDF 20-1   ISO 8968-1:2001	Titrimetry, Kjeldahl digestion	I
Milk powders and cream powders	Scorched particles	IDF 107   ISO 5739:2003	Visual comparison with standard disks, after filtration	IV
Milk powders and cream powders	Solubility	IDF 129   ISO 8156:2005	Centrifugation	I
Milk powders and cream powders	Acidity, titratable	IDF Standard 86:1981 ISO 6091:1980	Titrimetry, titration to pH 8.4	I
Milk powders and cream powders	Water	IDF 26   ISO 5537:2004 <sup>8</sup>	Gravimetry (drying at 102°C)	IV
Milkfat products	Antioxidants (phenolic)	IDF Standard 165:1993	Reversed phase gradient liquid chromatography	II
Milkfat Products	Copper	IDF Standard 76A:1980/ISO 5738:1980/AOAC 960.40	Photometry, diethylthiocarbamate	II
Milkfat products	Fatty acids, free (expressed as oleic acid)	IDF 6   ISO 1740:2004	Titrimetry	I
Milkfat products	Milkfat	IDF Standard 24:1964	Gravimetry (calculation from solids-not-fat and water content)	IV
Milkfat Products	Peroxide value (expressed as meq. of oxygen/kg fat)	AOAC 965.33	Titrimetry	I
Milkfat products	Vegetable fat (sterols)	IDF Standard 54:1979 ISO 3594:1976	Gas liquid chromatography	II
Milkfat products	Vegetable fat	IDF Standard 32:1965 ISO 3595:1976	Phytosteryl acetate test	III
Milkfat products	Water	IDF 23   ISO 5536:2002	Titrimetry (Karl Fischer)	II
Milkfat products (anhydrous milkfat)	Peroxide value	AOAC 965.33	Titrimetry	I

<sup>8</sup> The replacing method has only been validated for milk powders, not for creams

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Milk Products obtained from Fermented Milks Heat-Treated after Fermentation	Protein	IDF Standard 20B:1993 ISO 8968 Part I AOAC 991.20-23	Titrimetry (Kjeldahl)	I
Mozzarella	Milkfat in dry matter – with high moisture	IDF 5:2004   ISO 1735:2004	Gravimetry after solvent extraction	IV
Mozzarella	Milkfat in dry matter – with low moisture	IDF 5:2004   ISO 1735:2004	Gravimetry after solvent extraction	IV
Processed cheese products	Citric acid	IDF RM 34   ISO TS 2963:2006	Enzymatic method	II
Processed cheese products	Citric acid	AOAC 976.15	Photometry	III
Processed cheese products	Milkfat	IDF 5   ISO 1735:2004	Gravimetry (Schmid- Bondzynski-Ratzlaff)	I
Processed cheese products	Phosphate, added (expressed as phosphorus)	IDF Standard 51B:1991	Calculation	IV
Processed cheese products	Phosphorus	IDF Standard 33C: 1987 ISO 2962:1984	Spectrophotometry (molybdate-ascorbic acid)	II
Processed cheese products	Salt	IDF 88   ISO 5943:2004	Potentiometry (determination of chloride, expressed as sodium chloride)	II
Sweetened condensed milk	Milkfat	IDF Standard 13C: 1987 ISO 1737:1999	Gravimetry (Röse-Gottlieb)	I
Sweetened and Condensed Milks	Protein	AOAC 945.48H AOAC 991.20 – IDF 20B:1993	Kjeldahl, titrimetry	I
Sweetened Condensed Milks	Solids	IDF Standard 15B:1991 ISO 6734:1989	Gravimetry, drying at 102 °C	I
Whey Cheese	Dry matter (for denomination)	IDF 58   ISO 2920:2004	Gravimetry, drying at 88 °C	I
Whey cheeses by concentration	Dry matter (total solids)	IDF 58   ISO 2920:2004	Gravimetry, drying at 88 °C	I
Whey cheeses by coagulation	Dry matter (total solids)	IDF 4:2004 ISO 5534:2004	Gravimetry, Drying at 102°C	IV

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Whey cheese	Fat on the dry basis	IDF 59 A:1986   ISO 1854:1999 and IDF 58:2004   ISO 2920:2004	Calculation from fat content and dry matter content	I
Whey cheese	Milkfat (in dry matter)	IDF Standard 59A:1986 ISO 1854:1999	Gravimetry (Röse-Gottlieb)	I
Whey cheeses including Whey cheeses by concentration	Total fat	IDF 59A:1986 ISO 1854:1999	Gravimetry (Röse Gottlieb)	I
Whey cheeses by coagulation	Total fat	IDF 5:2004   ISO 1735:2004	Gravimetry (Schmid-Bondzynski-Ratzlaff)	I
Creamed whey cheese	Fat on the dry basis	IDF 59 A: 1986   ISO 1854: 1999 and IDF 58:2004   ISO 2920:2004	Calculation from fat content and dry matter content	I
Skimmed whey cheese	Fat on the dry basis	IDF 59 A:1986   ISO 1854:1999 and IDF 58:2004   ISO 2920:2004	Calculation from fat content and dry matter content	I
Whey powders	Ash	IDF Standard 90:1979 ISO 5545:1978	Furnace, 825°C	IV
Whey powders	Copper	AOAC 985.35	Atomic absorption spectrophotometry	II
Whey powders	Copper	IDF 76   ISO 5738:2004	Photometry (diethyldithiocarbamate)	III
Whey Powders	Lactose	IDF 79B:1991	Enzymatic method: glucose moiety (method A), galactose moiety (method B)	II
Whey powders	Lead	AOAC 972.25 (Codex general method)	Atomic absorption spectrophotometry	II
Whey powders	Milkfat	IDF Standard 9C:1987 ISO 1736:2000	Gravimetry (Röse-Gottlieb)	I

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Whey powders	Milk protein	ISO 8968-1   IDF 20-1:2001 AOAC 991.20	Titrimetry (modified Kjeldahl)	I
Whey powders	Moisture, "Free"	IDF 58   ISO 2920:2004	Gravimetry (drying at 88±2°C)	IV
Whey powders	Protein (total N x 6.38)	IDF Standard 92:1979 ISO 5549:1978	Titrimetry, Kjeldahl digestion	IV
Whey powders	Water (not including water of crystallization of lactose)	IDF 26A:1993 AOAC 927.05	Gravimetry	I
Yoghurt products	<i>Lactobacillus bulgaricus</i> & <i>Streptococcus thermophilus</i>	IDF 117   ISO 7889:2003	Colony count at 37°C	
Yoghurt products	<i>Lactobacillus bulgaricus</i> & <i>Streptococcus thermophilus</i>	IDF 146   ISO 9232:2003	Test for identification	
Yoghurt products	Solids, Total	IDF 151   ISO 13580:2005	Gravimetry (drying at 102°C)	I
Yoghurt	<i>Streptococcus thermophilus</i> & <i>Lactobacillus delbrueckii</i> subsp. <i>Bulgaricus</i> ≥= 10 <sup>7</sup> cfu/g	ISO 7889/IDF 117: 2003	Colony count at 37°C	I
Yoghurt	<i>Streptococcus thermophilus</i> & <i>Lactobacillus delbrueckii</i> subsp. <i>bulgaricus</i> ≥= 10 <sup>7</sup> cfu/g	ISO 9232/IDF 146:2003	Test for identification: morphological , cultural and biochemical characteristics	I
<b>Natural Mineral Waters</b>				
Natural mineral waters	Arsenic	AOAC 986.15 (Codex general method)	Atomic absorption spectrophotometry	II
Natural mineral waters	Arsenic	ISO 6595:1982 (confirmed 1995)	Spectrophotometry	IV
Natural mineral waters	Barium	<i>Examination of Water Pollution Control</i> WHO Pergamon Press (1982) Vol. 2, pp. 65-66		IV
Natural mineral waters	Barium	<i>Examination of Water Pollution Control</i> WHO Pergamon Press (1982) Vol. 2, pp. 67-68		IV
Natural mineral waters	Borate	ISO 9390:1990	Spectrophotometry	II

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Natural mineral waters	Cadmium	ISO 8288:1986 (confirmed 1995)	Flame atomic absorption spectrophotometry	II
Natural mineral waters	Cadmium	AOAC 974.27	Atomic absorption spectrophotometry	III
Natural mineral waters	Cadmium	AOAC 986.15 (Codex general method)	Anodic stripping voltammetry	III
Natural mineral waters	Calcium	ISO 6058:1984	Titrimetry	II
Natural mineral waters	Calcium	ISO 7980:1986 (confirmed 1995)	Atomic absorption spectrophotometry	III
Natural mineral waters	Chloride	<i>Examination of Water Pollution Control</i> WHO Pergamon Press (1982) Vol. 2, pp. 205-208		II
Natural mineral waters	Chloride	AOAC 973.51	Titrimetry (Mercuric nitrate)	III
Natural mineral waters	Chloride	ISO 9297:1989 (confirmed 1994)	Titrimetry	III
Natural mineral waters	Chromium (VI)	<i>Examination of Water Pollution Control</i> WHO Pergamon Press (1982) Vol. 2, pp. 86- 87		IV
Natural mineral waters	Coliform organism, thermotolerant organism and presumptive <i>Escherichia coli</i>	ISO 9308-1:1990	Membrane filtration	I
Natural mineral waters	Copper	ISO 8288:1986 (confirmed 1995)	Flame atomic absorption spectrophotometry	II
Natural mineral waters	Copper	AOAC 960.40 (Codex general method)	Colorimetry	III
Natural mineral waters	Faecal Streptococci	ISO 7899-2:1984	Membrane filtration	I
Natural mineral waters	Fluoride	<i>Examination of Water Pollution Control</i> WHO Pergamon Press (1982) Vol. 2, pp. 245-247		II
Natural mineral waters	Fluoride	<i>Examination of Water Pollution Control</i> WHO Pergamon Press (1982) Vol. 2, pp. 247-250		III

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Natural mineral waters	Iron, dissolved	ISO 6332:1988 (confirmed 1995)	Spectrophotometry	II
Natural mineral waters	Lead	ISO 8288:1986 (confirmed 1995)	Flame atomic absorption spectrophotometry	II
Natural mineral waters	Lead	AOAC 974.27	Atomic absorption spectrophotometry	III
Natural mineral waters	Magnesium	ISO 6059:1984 (confirmed 1995)	Titrimetry	II
Natural mineral waters	Magnesium	ISO 7980:1986 (confirmed 1995)	Atomic absorption spectrophotometry	III
Natural mineral waters	Manganese	<i>Examination of Water Pollution Control</i> . WHO Pergamon Press (1982) Vol. 2, pp. 121-122		II
Natural mineral waters	Manganese	ISO 6333:1986 (confirmed 1995)	Spectrophotometry	III
Natural mineral waters	Mercury	ISO 5666-3:1984 (confirmed 1995)	Flameless atomic absorption spectrophotometry	II
Natural mineral waters	Mercury	AOAC 977.22	Flameless atomic absorption spectrophotometry	III
Natural mineral waters	Nitrates	ISO 7890-2:1986 (confirmed 1995)	Spectrophotometry	II
Natural mineral waters	Nitrates	<i>Examination of Water Pollution Control</i> . WHO Pergamon Press (1982) Vol.2, pp. 280-283		IV
Natural mineral waters	Nitrates	<i>Handbuch Lebensmittel Chemie</i> (1969)		IV
Natural mineral waters	Nitrites	ISO 6777:1984	Molecular absorption spectrophotometry	IV
Natural mineral waters	Phenols	ISO 6439:1990 (confirmed 1995)	Spectrophotometry	I
Natural mineral waters	Potassium	<i>Examination of Water Pollution Control</i> . WHO Pergamon Press (1982) Vol.2, pp. 142-145		II
Natural mineral waters	Selenium	AOAC 986.15	Atomic absorption spectrophotometry	II

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Natural mineral waters	Selenium	<i>Examination of Water Pollution Control</i> . WHO Pergamon Press (1982) Vol.2, pp.320-322		III
Natural mineral waters	Sodium	<i>Examination of Water Pollution Control</i> . WHO Pergamon Press (1982) Vol.2 pp. 148-151		II
Natural mineral waters	Sodium	<i>Examination of Water Pollution Control</i> . WHO Pergamon Press (1982) Vol.2, pp. 151-152		III
Natural mineral waters	Spores of sulphite-reducing anaerobes (Clostridia)	ISO 6461-2:1986 (confirmed 1996)	Membrane filtration	I
Natural mineral waters	Sulphates	ISO 9280:1990 (confirmed 1995)	Gravimetry	III
Natural mineral waters	Sulphide	<i>Handb. Spurenanal.</i> 1974		IV
Natural mineral waters	Surface active agents	ISO 7875-1:1996	Spectrophotometry (methylene blue)	I
<b>Processed Fruits and Vegetables</b>				
Processed fruits and vegetables	Benzoic acid	NMKL 124 (1997)	Liquid Chromatography	II
Processed fruits and vegetables	Benzoic acid	NMKL 103 (1984); or AOAC 983.16	Gas Chromatography	III
Processed fruits and vegetables	Calcium	AOAC 968.31	Complexometry/ Titrimetry	II
Processed fruits and vegetables	Drained Weight	AOAC 968.30 (Codex General Method for processed fruits and vegetables)	Sieving Gravimetry	I
Processed fruits and vegetables	Fill of containers	CAC/RM 46-1972 (reference to "metal containers" deleted and refer to ISO 90.1:1986 for determination of water capacity in metal containers)	Weighing	I
Processed fruits and vegetables	Lead	AOAC 972.25 (Codex general method)	AAS (Flame absorption)	III
Processed fruits and vegetables	Packing medium Canned berry fruits (raspberry, strawberry)	AOAC 932.12 ISO 2173:1978	Refractometry	I

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Processed fruits and Vegetables (except canned bamboo shoots, pH determined by AOAC 981.12)	pH	ISO 1842:1991	Potentiometry	IV
Processed fruits and vegetables	pH	AOAC 981.12	Potentiometry	III
Processed fruits and vegetables	pH	NMML 179:2005	Potentiometry	II
Processed fruits and vegetables	Soluble solids	ISO 2173:2003 AOAC 932.12	Refractometry	I
Processed fruits and vegetables	Sorbates	NMML 103 (1984) / AOAC 983.16	Gas Chromatography	III
Processed fruits and vegetables	Sorbates	NMML 124 (1997)	Liquid Chromatography	II
Processed fruits and vegetables	Tin	AOAC 980.19 (Codex general method)	AAS	II
Processed fruits and vegetables	Total solids	AOAC 920.151	Gravimetry	I
Canned green beans and wax beans	Tough strings	CAC/RM 39-1970	Stretching	I
Canned green peas	Proper fill (in lieu of drained weight)	CAC/RM 45-1972	Pouring and measuring	I
Canned green peas	Solids, alcohol insoluble	AOAC 938.10	Gravimetry including sieving	I
Canned green peas	Types of peas, distinguishing	CAC/RM 48-1972	Visual inspection	I
Canned mangoes	Syrup	AOAC 932.14C	Brix spindle method	I
Canned mature processed peas	Solids, total	AOAC 964.22	Gravimetry (vacuum oven)	I
Canned mushrooms	Washed drained weight	CAC/RM 44-1972	Sieving	I
Canned palmito	Mineral impurities	ISO 762:1982 (confirmed 1992)	Gravimetry	I
Canned Stone Fruits	Drained weight	AOAC 968.30 ISO:2173:1978	Gravimetry	I
Canned Stone Fruits	Soluble solids	AOAC 932.14C	Refractometry	
Canned strawberries	Calcium	AOAC 968.31	Complexometric titrimetry	II
Canned strawberries	Mineral impurities	AOAC 971.33	Gravimetry	I

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Certain canned citrus fruits	Calcium	NMML 153:1996	Atomic Absorption Spectrophotometry	II
Certain canned citrus fruits	Calcium	AOAC 968.31	Complexometry Titrimetry	III
Citrus marmalade	Calcium	AOAC 968.31	Complexometric titrimetry	II
Dates	Identification of defects	Described in the Standard	Visual inspection	I
Dates	Moisture	AOAC 934.06	Gravimetry (vacuum oven)	I
Dried apricots	Identification of defects	Described in the Standard	Visual inspection (weighing)	I
Dried apricots	Moisture	AOAC 934.06	Gravimetry (vacuum oven)	I
Dried apricots	Sulphur dioxide	AOAC 963.20	Colorimetry	II
Grated desiccated coconut	Acidity, total (in extracted oil)	Described in the Standard	Titration of extracted oil	IV
Grated desiccated coconut	Ash	AOAC 950.49	Gravimetry	I
Grated desiccated coconut	Extraneous vegetable matter	Described in the Standard	Counting extraneous material with the naked eye	IV
Grated desiccated coconut	Moisture	AOAC 925.40	Gravimetry (loss on drying)	I
Grated desiccated coconut	Oil content	AOAC 948.22	Gravimetry	I
Jams (fruit preserves) and jellies	Calcium	AOAC 968.31	Complexometric titrimetry	II
Jams (fruit preserves) and jellies	Mineral impurities	AOAC 971.33	Gravimetry	I
Mango chutney	Ash insoluble in HCl	ISO 763:1982	Gravimetry	I
Pickled cucumbers	Acidity, total	AOAC 942.15	Titrimetry	I
Pickled cucumbers	Drained weight	AOAC 968.30	Gravimetry	I
Pickled cucumbers	Mineral impurities	AOAC 971.33	Gravimetry	I
Pickled cucumbers	Salt in brine	AOAC 971.27 (Codex general method)	Potentiometry	II
Pickled cucumbers	Volume fill by displacement	Described in the Standard	Displacement	I
Preserved tomatoes	Calcium	AOAC 968.31	Complexometric titrimetry	III
Preserved tomatoes	Calcium	NMML 153:1996	Atomic Absorption Spectrophotometry	II
Preserved tomatoes	Mould count	AOAC 965.41	Howard mould count	I

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Processed tomato concentrates	Lactic acid	EN 2631:1999	Enzymatic determination	II
Processed tomato concentrates	Mineral impurities (sand)	AOAC 971.33	Gravimetry	IV
Processed tomato concentrates	Mould count	AOAC 965.41	Howard mould count	I
Processed tomato concentrates	Natural tomato soluble solids	AOAC 970.59	Refractometry	I
Processed tomato concentrates	Sodium chloride	AOAC 971.27 (Codex general method)	Potentiometry	II
Processed tomato concentrates	Tomato soluble solids	AOAC 970.59	Refractometry	I
Raisins	Mineral impurities	CAC/RM 51-1974	Ashing	I
Raisins	Mineral oil	CAC/RM 52-1974	Extraction and separation on alumina	II
Raisins	Moisture	AOAC 972.20	Electrical conductance	I
Raisins	Sorbitol	AOAC 973.28	Gas chromatography	II
Raisins	Sulphur dioxide	AOAC 963.20	Colorimetry	II
Table olives	Acidity of brine	Described in the Standard	Titrimetry	IV
Table olives	pH of brine	Described in the Standard	Potentiometry	IV
Table olives	Salt in brine	AOAC 971.27 (Codex general method)	Potentiometry	II
Unshelled pistachio nuts	Identification of defects	Described in the Standard	Visual inspection	I
Unshelled pistachio nuts	Moisture	AOAC 925.40	Gravimetry (loss on drying)	I
Unshelled pistachio nuts	Size classification	Described in the Standard	Number per 500 g	I
<b>Quick Frozen Fruits and Vegetables</b>				
Quick frozen fruits and vegetables	Net weight	CAC/RM 34-1970	Weighing	I
Quick frozen fruits and vegetables	Thawing procedure	CAC/RM 32-1970	Thawing	I
Quick frozen fruits and vegetables: Berries, leek and carrot	Mineral impurities	CAC/RM 54-1974	Flotation and sedimentation	I
Quick frozen fruits and vegetables: Berries, Whole kernel corn and Corn-on-the-cob	Soluble solids, total	CAC/RM 43-1971	Refractometry	I

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Quick frozen fruits and vegetables: Peaches and berries	Drained fruit/drained berries	Described in the Standards	Draining	I
Quick frozen fruits and vegetables: Vegetables	Cooking procedure	CAC/RM 33-1970	Cooking	I
Quick frozen French fried potatoes	Moisture	AOAC 984.25	Gravimetry (convection oven)	I
Quick frozen green and wax beans	Tough strings	CAC/RM 39-1970	Stretching	I
Quick frozen peas	Solids, alcohol insoluble	CAC/RM 35-1970	Gravimetry	I
Quick frozen spinach	Dry matter, Salt-free	Described in the Standard	Weighing	I
<b>Processed Meat and Poultry Products and Soups and Broths</b>				
Meat Products	Nitrates and/or Nitrites	ENV 12014-3:1998-06 - Part 3	Spectrometric determination of nitrate and nitrite content of meat products after enzymatic reduction of nitrate to nitrite	III
Meat Products	Nitrates and/or Nitrites	ENV 12014-4:1998-06 - Part 4 NMKL 165 (2000)	Ion-exchange chromatographic method	III
Processed meat and poultry products	Fat	ISO 1443-1973	Gravimetry	I
Processed meat and poultry products	Lead	AOAC 934.07	Colorimetry (dithizone)	II
Processed meat and poultry products	Nitrates	ISO 3091:1975 (confirmed 1996)	Colorimetry (cadmium reduction)	II
Processed meat and poultry products	Nitrites	ISO 2918:1975 (confirmed 1996)	Colorimetry	IV
Processed meat and poultry products	Tin	AOAC 985.16 (Codex general method)	Atomic absorption spectrophotometry	II
Processed meat and poultry products	Nitrogen/protein	ISO 937:1978 (confirmed 1995)	Titrimetry	II
Bouillons and Consommés (soups and broths)	Amino nitrogen	AIIBP Method No 2/7	Volumetry (modified Van Slyke)	II
Bouillons and Consommés (soups and broths)	Creatinine	AIIBP Method No 2/5	HPLC	II
Bouillons and Consommés (soups and broths)	Nitrogen, total	AOAC 928.08	Kjeldahl	II

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Bouillons and Consommés (soups and broths)	Sodium chloride	AIBP Method No 2/4	Potentiometric titration (chloride expressed as sodium chloride)	II
Canned corned beef	Lead	AOAC 972.25 (Codex general method)	Atomic absorption spectrophotometry	II
Canned corned beef	Nitrites, potassium and/or sodium salt	AOAC 973.31 (Codex general method)	Colorimetry	II
Canned corned beef	Nitrites, potassium and/or sodium salt	ISO 2918:1975 (confirmed 1996)	Colorimetry	IV
Canned corned beef	Tin (Products in tinplate and other containers)	AOAC 985.16 (Codex general method)	Atomic absorption spectrophotometry	II
Cooked cured chopped meat	Fat	ISO 1443:1973	Gravimetry (extraction)	I
Cooked cured chopped meat	Lead	AOAC 972.25 (Codex general method)	Atomic absorption spectrophotometry	II
Cooked cured chopped meat	Nitrites	AOAC 973.31 (Codex general method)	Colorimetry	II
Cooked cured chopped meat	Nitrites	ISO 2918:1975 (confirmed 1996)	Colorimetry	IV
Cooked cured chopped meat	Tin	AOAC 985.16 (Codex general method)	Atomic absorption spectrophotometry	II
Cooked cured ham	Fat	ISO 1443:1973	Gravimetry (extraction)	I
Cooked cured ham	Gelatin, added	Described in the Standard	Calculation	I
Cooked cured ham	Lead	AOAC 972.25 (Codex general method)	Atomic absorption spectrophotometry	II
Cooked cured ham	Nitrites	AOAC 973.31 (Codex general method)	Colorimetry	II
Cooked cured ham	Nitrites	ISO 2918:1975 (confirmed 1996)	Colorimetry	IV
Cooked cured ham	Protein (conversion factor 6.25)	ISO 937:1978 (confirmed 1995)	Titrimetry, Kjeldahl digestion	II
Cooked cured ham	Tin	AOAC 985.16 (Codex general method)	Atomic absorption spectrophotometry	II
Cooked cured pork shoulder	Fat	ISO 1443:1973	Gravimetry (extraction)	I
Cooked cured pork shoulder	Gelatin, added	Described in the Standard	Calculation	I
Cooked cured pork shoulder	Lead	AOAC 972.25 (Codex general method)	Atomic absorption spectrophotometry	II
Cooked cured pork shoulder	Nitrites	AOAC 973.31 (Codex general method)	Colorimetry	II

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Cooked cured pork shoulder	Nitrites	ISO 2918:1975 (confirmed 1996)	Colorimetry	IV
Cooked cured pork shoulder	Protein	ISO 937:1978 (confirmed 1995)	Titrimetry, Kjeldahl digestion	II
Cooked cured pork shoulder	Tin	AOAC 985.16 (Codex general method)	Atomic absorption spectrophotometry	II
Luncheon meat	Fat	ISO 1443:1973	Gravimetry (extraction)	I
Luncheon meat	Lead	AOAC 972.25 (Codex general method)	Atomic absorption spectrophotometry	II
Luncheon meat	Nitrites, potassium and/or sodium salt	AOAC 973.31 (Codex general method)	Colorimetry	II
Luncheon meat	Nitrites, potassium and/or sodium salt	ISO 2918:1975 (confirmed 1996)	Colorimetry	IV
Luncheon meat	Tin	AOAC 985.16 (Codex general method)	Atomic absorption spectrophotometry	II
<b>Sugars and Honey</b>				
Honey	Acidity	MAFF Validated Method V19 <i>J. Assoc. Public Analysts</i> (1992) 28 (4) 171-175	Titrimetry	I
Honey	Moisture	AOAC 969.38B or MAFF Validated Method V21	Refractometry	I
Honey	Sample preparation	AOAC 920.180	-	-
Honey	Solids, water-insoluble	MAFF Validated Method V22 <i>J. Assoc. Public Analysts</i> (1992) 28(4) 189-193	Gravimetry	I
Honey	Sugars added (for sugar profile)	AOAC 998.18	Carbon isotope ratio mass spectrometry	I
Honey	Sugars added: detection of corn and cane sugar products	AOAC 978.17	Carbon isotope ratio mass spectrometry	I
Sugars (dextrose anhydrous and dextrose monohydrate)	D-Glucose	ISO 5377:1981	Titrimetry	I

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Sugars (dextrose anhydrous and dextrose monohydrate)	Solids, total	ISO 1741:1980	Gravimetry (vacuum oven)	I
Sugars (dextrose anhydrous and dextrose monohydrate, dried glucose syrup, glucose syrup, powdered dextrose, lactose)	Sulphated ash	ISO 5809:1982	Single sulphonation	I
Sugars (dextrose anhydrous and dextrose monohydrate)	Sulphur dioxide	ISO 5379:1983	Acidimetry and nephelometry	IV
Sugars (fructose)	pH	ICUMSA GS 1/2/3/4/7/8-23 (1994)	Potentiometry	I
Sugars (fructose)	Conductivity ash	ICUMSA GS 2/3-17 (1994)	Conductimetry	I
Sugars (fructose)	D-Fructose	ISO 10504:1988	Liquid chromatography (refractive index detection)	II
Sugars (fructose)	D-Glucose	ISO 10504:1988	Liquid chromatography (refractive index detection)	II
Sugars (fructose)	Loss on drying	ISO 1742:1980	Gravimetry	I
Sugars (fructose)	Sulphur dioxide	ISO 5379:1983	Acidimetry and nephelometry	IV
Sugars (glucose syrup and dried glucose syrup)	Reducing sugar	ISO 5377:1981	Titrimetry	I
Sugars (glucose syrup and dried glucose syrup)	Solids, total	ISO 1742:1980	Gravimetry (vacuum oven)	I
Sugars (glucose syrup and dried glucose syrup)	Sulphur dioxide	ISO 5379:1983	Acidimetry and nephelometry	IV
Sugars (lactose)	Lactose, anhydrous	ICUMSA GS 4/3-3 (1994)	Titrimetry	II
Sugars (lactose)	Loss on drying	USP General Chapter 731	Gravimetry (Drying at 120°C for 16 h)	I
Sugars (lactose)	pH	ICUMSA GS 1/2/3/4/7/8-23 (1994)	Potentiometry	I
Sugars (plantation or mill white sugar)	Conductivity ash	ICUMSA GS 1/3/4/7/8-13 (1994)	Conductimetry	I
Sugars (plantation or mill white sugar)	Invert sugar	ICUMSA GS 1/3/7-3 (1994)	Titrimetry (Lane & Eynon)	I

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Sugars (plantation or mill white sugar)	Loss on drying	ICUMSA GS 2/1/3-15 (1994)	Gravimetry	I
Sugars (plantation or mill white sugar)	Polarization	ICUMSA GS 1/2/3-1 (1994)	Polarimetry	II
Sugars (plantation or mill white sugar)	Sulphur dioxide	ICUMSA GS 2/3-35 (1998) NMKL 135 (1990) EN 1988-2 (1998)	Enzymatic method	II
Sugars (powdered sugar and powdered dextrose)	Sulphur dioxide	ICUMSA GS 2/3-35 (1998) NMKL 135 (1990) EN 1988-2 (1998)	Enzymatic method	II
Sugars (powdered sugar)	Colour	ICUMSA GS 2/3-9 (1994)	Photometry	I
Sugars (powdered sugar)	Conductivity ash	ICUMSA GS 2/3-17 (1994)	Conductimetry	I
Sugars (powdered sugar)	Invert sugar	ICUMSA GS 2/3-5 (1997) after filtration if necessary to remove any anticaking agents	Titrimetry	I
Sugars (powdered sugar)	Loss on drying	ICUMSA GS 2/1/3-15 (1994)	Gravimetry	I
Sugars (powdered sugar)	Polarization	ICUMSA GS 2/3-1 after filtration if necessary to remove any anticaking agents	Polarimetry	II
Sugars (raw cane sugar)	Sulphur dioxide	ICUMSA GS 2/3-35 (1998) NMKL 135 (1990) EN 1988-2 (1998)	Enzymatic method	II
Sugars (soft white sugar and soft brown sugar)	Conductivity ash	ICUMSA GS 1/3/4/7/8-13 (1994)	Conductimetry	I
Sugars (soft white sugar and soft brown sugar)	Invert sugar	ICUMSA GS 4/3-3 (1994) (applicable at levels >10% m/m)	Titrimetry (Lane & Eynon)	I
Sugars (soft white sugar and soft brown sugar)	Invert sugar	ICUMSA GS 1/3/7-3 (1994) (applicable at levels <10% m/m)	Titrimetry (Lane & Eynon)	I
Sugars (soft white sugar and soft brown sugar)	Loss on drying	ICUMSA GS 2/1/3-15 (1994)	Gravimetry	I
Sugars (soft white sugar and soft brown sugar)	Sucrose plus invert sugar	ICUMSA GS 4/3-7 (1994)	Titrimetry	I
Sugars (soft brown sugar)	Sulphated ash	ICUMSA GS 1/3/4/7/8-11 (1994)	Gravimetry	I

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Sugars (soft white sugar and soft brown sugar)	Sulphur dioxide	ICUMSA GS 2/3-35 (1998) NMKL 135 (1990) EN 1988-2 (1998)	Enzymatic method	II
Sugars (soft white sugar)	Colour	ICUMSA GS 2/3-9 (1994)	Photometry	I
Sugars (white sugar)	Conductivity ash	ICUMSA GS 2/3-17 (1994)	Conductimetry	I
Sugars (white sugar)	Invert sugar	ICUMSA GS 2/3-5 (1997)	Titrimetry	I
Sugars (white sugar)	Loss on drying	ICUMSA GS 2/1/3-15 (1994)	Gravimetry	I
Sugars (white sugar)	Polarization	ICUMSA GS 2/3-1 (1994)	Polarimetry	II
Sugars (white sugar)	Sulphur dioxide	ICUMSA GS 2/3-35 (1998) NMKL 135 (1990) EN 1988-2 (1998)	Enzymatic method	II
<b>Miscellaneous Products</b>				
Edible cassava flour	Fibre, crude	ISO 5498:1981 (B.5 separation)	Gravimetry	I
Edible cassava flour	Granularity	ISO 2591-1:1988	Sieving	I
Edible cassava flour	Moisture	ISO 712:1998	Gravimetry	I
Food grade salt	Arsenic	ESPA/CN-E/105-1996	Photometry	II
Food grade salt	Cadmium	ESPA/CN-E/107-1997	Atomic absorption spectrophotometry	II
Food grade salt	Calcium and magnesium	ISO 2482:1973	Complexometric titrimetry	II
Food grade salt	Copper	ESPA/CN-E/101-1994	Photometry	II
Food grade salt	Halogens	ISO 2481:1973	Mercurimetry	II
Food grade salt	Insoluble matter	ISO 2479:1972	Gravimetry	II
Food grade salt	Iodine	ESPA/CN-E/109-1994	Titrimetry using sodium thiosulphate	II
Food grade salt	Iodine	AOAC 925.56	Titrimetry using sodium thiosulphate	III
Food grade salt	Lead	ESPA/CN-E/108-1994	Atomic absorption spectrophotometry	II
Food grade salt	Loss on drying	ISO 2483:1973	Gravimetry (drying at 110°C)	I

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Food grade salt	Mercury	ESPA/CN-E/106-1994	Cold vapour atomic absorption spectrophotometry	II
Food grade salt	Potassium	ESPA/CN-E/104-1994 (applicable to products containing $\geq 2$ mg-K/kg)	Flame atomic absorption spectrophotometry	II
Food grade salt	Potassium	ESPA/CN-E/103-1994 (applicable to products containing $\geq 100$ mg-K/kg)	Titrimetry	III
Food grade salt	Sodium chloride	Described in the Standard	Calculation	I
Food grade salt	Sulphate	ISO 2480:1972	Gravimetry	II
Gari	Ash	ISO 2171:1993	Gravimetry	I
Gari	Fibre, crude	ISO 5498:1981 (B.5 separation)	Gravimetry	I
Gari	Granularity	ISO 2591-1:1988	Sieving	I
Gari	Moisture	ICC Method No 109/1 (1986) ISO 712:1998	Gravimetry	I
Guideline level for acrylonitrile	Acrylonitrile	AOAC 985.13	Gas chromatography	II
Guideline levels for mercury in fish	Methyl mercury	AOAC 988.11	Atomic absorption spectrophotometry	II
Guideline levels for vinyl chloride monomer	Vinyl chloride monomer	ISO 6401:1985	Gas chromatography	II
Guideline levels for vinyl chloride monomer	Vinyl chloride monomer	Commission Directive 81/432/EEC O.J. No. L.167, p. 6, 24.6.81	Gas chromatography ("head-space")	III
Guidelines for nutrition labelling	Polyunsaturated fatty acids	AOCS Ce 1h-05 <sup>9</sup>	Gas liquid chromatography	II
Guidelines for nutrition labelling	Saturated fat	AOAC 996.06; or AOCS Ce 1h-05	Gas liquid chromatography	II
Guidelines for nutrition labelling	Saturated fatty acids	AOCS Ce 1h-05	Gas liquid chromatography	II

<sup>9</sup> Can also be used to measure *trans* unsaturated fatty acids

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PART B

METHODS OF SAMPLING BY ALPHABETICAL ORDER OF COMMODITY CATEGORIES AND NAMES

Commodity Standard	Method of Sampling	Notes
<b>Cereals, Pulses and Legumes and Derived Products</b>		
Durum wheat semolina and durum wheat flour	Described in the Standard (According to Codex Sampling Instructions)	
Wheat protein products including Wheat gluten	ISO 13690:1999	
<b>Fats and Oils</b>		
Olive Oils and Olive-Pomace Oils	ISO 661:1989 and ISO 5555:2001.	
<b>Milk and Milk Products</b>		
Milk products	IDF 50   ISO 707 <sup>10</sup>	General Instructions for obtaining a sample from a bulk
Milk products	IDF 113   ISO 5538:2004	Inspection by attributes
Milk products	IDF Standard 136A:1992 ISO 8197:1988	Inspection by variables
Butter	IDF 50   ISO 707	General Instructions for obtaining a sample from a bulk
Cheese	IDF 50   ISO 707	General Instructions for obtaining a sample from a bulk
Cheeses in brine	IDF 50   ISO 707	General Instructions for obtaining a sample from a bulk
Edible casein products	IDF 50   ISO 707	General Instructions for obtaining a sample from a bulk
Creams, Whipped creams and Fermented	IDF Standard 50C:1995	General instructions

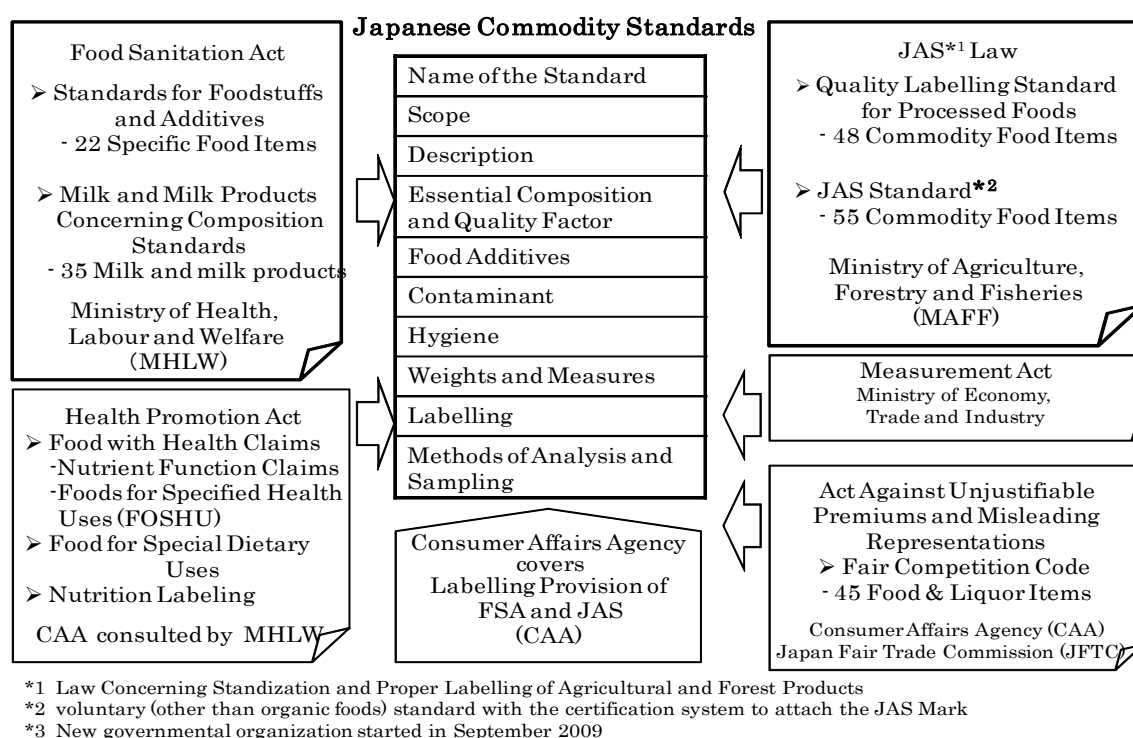
<sup>10</sup> Draft standard which is publicly available

Creams	ISO 707:1997	
Fermented Milks	AOAC 968.12	
Evaporated milks	IDF 50   ISO 707	General Instructions for obtaining a sample from a bulk
Milk powders and cream powders	IDF 50   ISO 707	General Instructions for obtaining a sample from a bulk
Milkfat products	IDF 50   ISO 707	General Instructions for obtaining a sample from a bulk
Sweetened condensed milks	IDF 50   ISO 707	General Instructions for obtaining a sample from a bulk
Whey cheese	IDF 50   ISO 707	General Instructions for obtaining a sample from a bulk
Whey powders	IDF 113   ISO 5538:2004	Inspection by attributes
Whey powders	IDF 50   ISO 707	General Instructions for obtaining a sample from a bulk
<b>Processed Fruits and Vegetables</b>		
Grated desiccated coconut	Described in the Standard (According to Codex Sampling Instruction)	

## 3.2 Japan

### 3.2.1 Summary Chart of relationship between food regulatory system and commodity food standards

Summary chart of relationship between food regulation system and commodity food standards in Japan is shown in **Figure 3.2-1** in a way that Codex Alimentarius Commission presented in **Figure 3.1-1**. This section was prepared because it is important to introduce regulatory framework on foods in Japan for mutual understanding among member countries.



**Figure 3.2-1 Japanese Food Regulatory System**

#### 3.2.2.1 The Law Concerning Standardization and Proper Labeling of Agricultural and Forestry Products

The law consists of combination of "JAS Standards System" which is voluntary except for the JAS Standards for Organic Foods, and "the Quality Labeling Standards System" which mandate for quality labeling purposes including name of food, raw materials and place/country of origin.

##### (1) The Quality Labeling Standards System

The Quality Labeling Standards System provides cross-category standards for fresh foods, processed foods and genetically modified foods, and individual standards for 3 fresh foods and 48 processed foods (FY2009 Report

Table 3.2-1)

## (2) JAS Standards System

JAS Standards mainly stipulate quality, composition, grade and usefulness for food, forest and agricultural products including silk and rush tatami facing. JAS Standards System is a certification system to bear JAS marks on the label through certification by Registered Certifying Bodies. Products should meet to JAS standards, standards for maintenance and quality control in manufacturing facility, performance of production process control etc. As of March 2010, JAS Standards for food define 55 items in five areas (see FY2009 Report Table 3.2-2).

### **3.2.2.2 Food Sanitation Act and related regulations**

Food Sanitation Act stipulates matters related food safety including food additives, pesticide residues, contaminants and hygiene.

#### (1) Standards for Foodstuffs and Additives (Notification of Ministry of Health and Welfare No. 370)

Standards for Foodstuffs and Additives define standards for component, production and storage for 22 specific food items, in addition to general standards for component, production, processing and preparation, and storage for food (see FY2009 Report Table 3.2-3).

#### (2) Ministerial Ordinance on Compositional Standards for Milk and Milk Products (Ordinance of Ministry of Health and Welfare No. 52)

For milk and milk products, the ordinance specifically stipulates standards for component, production, storage and hygiene (see FY2009 Report Table 3.2-4).

### **3.2.2.3 Fair Competition Code for Labeling of Food Items**

Fair Competition Code based on Act against Unjustifiable Premiums and Misleading Representations stipulates voluntary standards for labeling of food items for individual firms and industry associations (see FY2009 Report Table 3.2-5), and is governed by Consumers Affairs Agency and the Fair Trade Commission. When their activities violate the code, penalty shall be imposed to their business activity. The Fair Trade Commission could take an action against even an outsider in accordance with social recognition of the code.

### **3.2.3 Methods of Analysis for General Foods**

Methods of analysis for "General Foods" are shown in **Table 3.2-A.**



Methods of analysis for the food categories taken up in the Case Study are described in the charts under the tables for the standards for those food categories (**Tables 3.2-6, 3.2-7, and 3.2-8**), respectively.

#### **3.2.4 Case Study (Comparison with Codex Standards)**

Standards for "Instant Noodles", "Carbonated Drinks" and "Prepared Frozen Foods" were selected and compared with Codex Standards. "Instant Noodles" are one of the noodles standardized in many East Asian countries. "Carbonated Drinks" is one of the common soft drinks. "Prepared Frozen Foods" are defined in detail by JAS system.

##### **(1) Instant Noodles**

Codex Commodity Standard for Instant Noodles was proposed by Japan and other Asian countries and adopted in 2006. Instant noodles are classified in 06.4.3 Pre-cooked pastas and noodles and like products in FCS (Food Category System) and this standard is a sole commodity standard in 06.4 category: Pastas, Noodles and like products.

In **Table 3.2-6**, summaries of "Instant Noodles" were compared with Codex Commodity Standards, Standards for Foodstuffs in Food Sanitation Act, Quality Labelling Standards and JAS Standards in JAS Law.

##### **(2) Carbonated Soft Drinks**

In FCS, beverages are classified in 14.0: Beverages excluding dairy products, 14.1: Non-alcoholic beverages and 14.2: Alcoholic beverages. Codex Commodity Standards defined in 14.1 are only for 3 items; Natural Mineral Waters (Stan 108-1981), Bottled/Packaged Waters other than natural mineral waters (Stan 227-2005) and Fruit juice and Nectars (Stan 247-2005).

Carbonated Drinks are fallen into 14.1.4.1: Carbonated water-based flavored drinks in 14.1.4: Water-based flavored drinks including sport drinks, energy drinks and electrolyte beverages.

In Food Sanitation Act, Carbonated Drinks are included in wide-ranging "Soft Drinks" defined in specified food items. Quality Labeling Standard and JAS Standard for "Carbonated Drinks" are set in JAS System. Summaries are compared in **Table 3.2-7**.

##### **(3) Prepared Frozen Foods**

JAS Quality Labeling Standard defines that Prepared Frozen Foods are Frozen fried foods, Frozen Shaomai, Frozen Gyoza, Frozen Harumaki (spring rolls), Frozen Hamburger Steaks, Frozen Meatballs, Frozen Fish hamburgers, Frozen Fishballs, Frozen Steamed Rice and Frozen noodles. Prepared Frozen Foods are defined as food filled into containers or food

packaged. Quality labeling standard are defined in details including name of materials, their contents, and percentage of coating and wrapping material. Prepared Frozen Foods was selected for a case study because large amounts of their materials and processed products are being imported to Japan and they are foods in high demand. In Food Sanitation Act, Prepared Frozen Foods are included in wide-ranging Frozen Foods defined in specified food items and should follow microbiological criteria and storage standards.

Twenty-three commodity standards for quick frozen foods (for example, vegetables, fruits, meat, fish and shellfish) are defined in Codex, while only one commodity standard for corresponding prepared frozen food in Japan (Quick frozen Fish Sticks (Fish fingers)), Fish portions and fish Fillets-Breaded in Batter (Stan 166-1989). **Table 3.2-8** provides table for their comparison.

**Table 3.2-A Methods of Analysis for General Foods**

Related legislation	Item	Specification	Analytical Methods	Reference
Food Sanitation Act	Antibiotics or Chemically synthesized antibacterial substances	Shall not be contained in foods		Food Sanitation Test Guideline "Animal Medicine·Feed Additive 2003"
	Foods shall not contain substances used as ingredients of agricultural chemicals and other chemical substances	Not detectable in foods	Each Test Methodology of 2,4,5-T, Azocyclotin and cyhexatin, Amitrol, Captafol, Carbadox, Coumaphos, Chloramphenicol, Chlorpromazine, Diethylstilbestrol, Dimetridazole, Daminozide, Nitrofurazone, Nitrofurantoin, Furazolidone, Furaladone, Propham, Malachite Green, Metronidazole and Ronidazole.	Specifications and Standards for Foods, Food Additives, etc.
	Pesticide residues in foods	The residual standard is individually provided.	Systematic or individual analytical methods are generally as follows:  (1)Sample preparation→(2)Extraction with solvent→(3)Purification by chromatography →(4)Preparation of test solution→ (5)Instrumental analysis: GC or GC-MS for volatile substances, LC or LC-MS for non-volatile substances etc.	Test methodology of the substances being the elements of agricultural chemicals, feed additives or verterinary products remaining in foods. (Notice from the Ministry of Health, Labour and Welfare)
	Compositional standards which are not specified in 0-1 through 0-3 shall not contain substances used as agricultural chemicals nor other chemical substances in excess of the amount.	Not exceed 0.01mg/L		

**Table 3.2-6 Case Study 1 Instant Noodles**

	Codex Commodity Standard	Food Sanitation Act	JAS Law	
		Standard for Foodstuffs	Quality Labelling Standard	JAS Standard
Name of the Standard	Instant Noodles CODEX STAN 249-2006	Instant Noodles	Instant Noodles	Instant Noodles
Scope	ready for consumption after dehydration process.....	<ul style="list-style-type: none"> <li>Fried noodles</li> </ul>	<ul style="list-style-type: none"> <li>include raw type</li> </ul>	
Description	Fried noodles, Non-fried noodles			
Essential Composition and Quality Factor	3.1 Composition 3.1.1 Essential Ingredients 3.1.2 Optional Ingredients 3.2 Quality Criteria 3.2.1 Organoleptic 3.2.2 Foreign Matter 3.2.3 Analytical Requirement for Noodle Block (a) Moisture Content maximum : fried 10% : non-fried 14% (b) Acid value maximum 2mg KOH/g oil	<ul style="list-style-type: none"> <li>Acid value not more than 3 mg KOH/g oil</li> <li>Peroxide value not more than 30 meq/kg</li> </ul>	<ul style="list-style-type: none"> <li>Wheat flower and/or buckwheat flower as the main ingredients</li> <li>Add salt or lye water</li> </ul>	<ul style="list-style-type: none"> <li>Moisture not more than 14.5% (non-fried)</li> <li>Acid value not more than 1.5 mg KOH/g oil</li> <li>pH 3.8-4.8 (non-fried)</li> </ul>
Food Additives	MRLs of GSFA			<ul style="list-style-type: none"> <li>Positive List (limited use)</li> </ul>
Contaminant	MRLs of GSCTFF			
Hygiene	6. Containers or Packing Condition 7.1 General Principle of Food Hygiene and other relevant Codex Text 7.2 Principle for the establishment and application of Microbiological Criteria for Foods	<ul style="list-style-type: none"> <li>Storage Standard</li> </ul>		<ul style="list-style-type: none"> <li>Container and Packing Condition</li> </ul>

Weights and Measures				
Labelling	8.1 Name of the Food 8.2 Labelling for "HALAL"		● Specific Labelling Methods	● JAS Mark
Methods of Analysis and Sampling	9.1 Sampling 9.2 Determination of Moisture 9.3 Extraction of oil from Instant Noodle 9.4 Determination of Acid Value	● Acid value ● Peroxide value		● Moisture ● Acid value ● pH

\* This Table does not contain details of standards regulated for all foodstuffs such as;

- Quality Labelling Standard for Processed Foods ( JAS Law)
- General Compositional Standard for Food; General Food Production Processing and Preparation Standards; General Food Storage Standards (Food Sanitation Act)

### <Methods of Analysis> Instant Noodles

Related legislation	Item	Specification	Analytical Methods	Reference
Food Sanitation Act	Acid value	Not more than 3 mg KOH/g oil	Acid value measurement method by titration	Specifications and Standards for Foods, Food Additives, etc.
	Peroxide value	Not more than 30 meq/kg	Peroxide value measurement method by titration	
JAS Standard	Moisture	Not more than 14.5% (non-fried)		
	Acid value	Not more than 1.5 mg KOH/g oil		
	pH	3.8-4.8 (non-fried)		

**Table 3.2-7 Case Study 2 Carbonated Soft Drinks**

	<b>Food Sanitation Act</b>	<b>JAS Law</b>	
	Standard for Foodstuffs	Quality Labelling Standard	JAS Standard
Name of the Standard	Soft Drink Beverages	Carbonated Soft Drinks	Carbonated Soft Drinks
Scope	Non-alcoholic (less than 1% alcohol) beverages, excluding lactic acid bacterial drinks, milk and milk drinks	Water-based flavoured drinks with added carbon dioxide, sweetener, acidulant and others	Water-based flavoured drinks with added carbon dioxide, sweetener, acidulant and others
Description			
Essential Composition and Quality Factor	<ul style="list-style-type: none"> <li>● Must not be turbid (with some exception)</li> <li>● Must not contain any sediment or any solid foreign matter (with some exception)</li> <li>● Must not contain detectable levels of arsenic, lead or cadmium. The tin content must not exceed 150.0 ppm</li> <li>● Tests for coliform bacilli must be negative</li> <li>● Mineral water with a carbon dioxide pressure inside of the container of not more than 98 kPa at 20 degree in Celsius , and that has not been sterilized or disinfected, must test negative for enterococci or green pus bacilli</li> <li>● For beverages made for solely apple juices and/or juiced fruit, the patulin content must not exceed 0.050 ppm</li> </ul>		<ul style="list-style-type: none"> <li>● Must have satisfactory tone of colour</li> <li>● Must have refreshing flavour without off-taste and off-odour</li> <li>● Must not be turbid (with some exception)</li> <li>● Must carbon dioxide be dissolved well and have fine bubbles sustainably</li> <li>● No foreign matters</li> </ul>
Contaminant			
Hygiene			
Food Additives	<ul style="list-style-type: none"> <li>➤ Production Standards</li> <li>➤ Packaging Standards</li> <li>➤ Storage Standards</li> </ul>		<ul style="list-style-type: none"> <li>● Preservative: only sodium benzoate and p-hydroxybenzoic acid allowed to use</li> <li>● Antioxidant: only L-ascorbic acid and sodium L-ascorbate allowed to use</li> <li>● Emulsifier: only sucrose fatty acid ester and glycerin fatty acid ester allowed to use</li> </ul>
Weights and Measures			Must meet designated volume appeared on the label
Labelling		Specific labelling methods	JAS mark
Methods of Analysis and Sampling	<ul style="list-style-type: none"> <li>● Tests for arsenic, lead, cadmium, tin, patulin,</li> <li>● coliform bacilli, enterococci or green pus bacilli</li> <li>● Tests for water used as raw material</li> <li>● Standards and testing methods for implements, containers and packaging</li> </ul>		<ul style="list-style-type: none"> <li>● Gas volume</li> </ul>

<Methods of Analysis> Carbonated Soft Drinks

Sub-category	Related legislation	Item	Specification	Analytical Methods	Reference
Soft drink beverages	Food Sanitation Act	Turbidity	Negative		Specifications and Standards for Foods, Food Additives, etc.
		Foreign matter	Negative		
		Arsenic	Not detectable	Wet degradation methodour Dry incineration method→Gutzeit methodour Silver diethyldithiocarbamate method	
		Lead	Not detectable	Wet degradation methodour Dry incineration method→Atomic absorption spectrophotometry or Polarographic analysis	
		Cadmium	Not detectable		
		Tin	Not exceed 150.00 ppm	Wet degradation methodour Dry incineration method→Salicylidenamino-2-thiophenol methodour Polarographic analysis	
		Coliform bacilli	Negative	Presumptive test (BTB lactose broth) → Confirmation test (Endo or EMB culture medium, or BGLB fermentation tube)→ Conclusive test (Lactose broth fermentation tube and agar slant)	
Mineral water	Food Sanitation Act	Enterococci	Negative	Presumptive test (AC culture medium)→ Confirmation test (new AC culture medium)→ Conclusive test (Glucose agar medium)	Specifications and Standards for Foods, Food Additives, etc.
		Green pus bacilli	Negative	Presumptive test (Asparagine broth)→ Confirmation test (Cetrimide agar medium)	
Apple juices	Food Sanitation Act	Patulin	Not exceed 0.0050 ppm	Extraction→Purification and Silylization→ GC-MS、 Purification→HPLC with UD detector or HPLC-MS	Specifications and Standards for Foods, Food Additives, etc.
	JAS Standard	Turbidity	Negative		
		Foreign matter	Negative		

**Table 3.2-8 Case Study 3 Prepared Frozen Foods**

JAS Quality Labelling Standard Prepared Frozen Foods (detail Items)		
➤ Frozen fried foods	<ul style="list-style-type: none"> <li>• Fried Fishes</li> <li>• Fried Shrimps</li> <li>• Fried Squids</li> <li>• Fried Oysters</li> <li>• Croquettes</li> <li>• Katuretu(fried meat)</li> </ul>	Product names are defined by main material contents, limitation of alternative material, percentage of coatings, wrapping material etc.
<ul style="list-style-type: none"> <li>➤ Frozen Shaumai</li> <li>➤ Frozen Gyoza</li> <li>➤ Frozen Harumaki (spring rolls)</li> <li>➤ Frozen Hamburger steaks Frozen Meatballs</li> <li>➤ Frozen Fish hamburgers Frozen Fishballs</li> <li>➤ Frozen Steamed Rice Frozen Noodles</li> </ul>		

Standard for Foodstuffs (Food Sanitation Act) Frozen Foods		
Standard for Components (to be consumed )	Bacterial count	Coliform group
without heating	100,000/g>	Test negative
after heating (heated before freezing )	100,000/g>	Test negative
After heating (other than 2 above)	3,000,000/g>	Test negative
Storage Standard	must be below -15° C	



<Methods of Analysis> Prepared Frozen Foods

Sub-category	Related legislation	Item	Specification	Analytical Methods	Reference
Without heating	Food Sanitation Act	Bacteria	<100,000/g	Standard agar medium 35±1.0°C, 24±2h	Specifications and Standards for Foods, Food Additives, etc.
		Coliform bacilli	Negative	Presumptive test (desoxycholate agar medium)→EMB medium→Lactose broth fermentation tube and agar slant. The lactose broth fermentation tube : gas generation→agar slant: microscopic test→Gram-negative nonspore-forming bacilli: coliform bacilli positive	
After heating (heated before freezeing)		Bacteria	<100,000/g	Standard agar medium 35±1.0°C 24±2h	
		Coliform bacilli	Negative	Presumptive test (desoxycholate agar medium)→EMB medium→Lactose broth fermentation tube and agar slant. The lactose broth fermentation tube : gas generation→agar slant: microscopic test→Gram-negative nonspore-forming bacilli: coliform bacilli positive	
After heating (other than 2 above)		Bacteria	<3,000,000/g	Standard agar medium 35±1.0°C, 24±2h	
		Coliform bacilli	Negative	EC fermentation tube (EMB medium) →Gas generation : Presumptive test positive→EMB medium→Lactose broth fermentation tube and agar slant. The lactose broth fermentation tube : gas generation→The agar slant : microscopic test→Gram-negative nonspore-forming bacilli : <i>E.coli</i> positive	

### 3.3 Korea

#### 3.3.1 Acts and Regulations Related to Food Standards

##### 3.3.1.1 Administrative authorities

Administrative authorities in Korea shown in **Table 3.3-1** are responsible for food administration in accordance with food categories and control items.

**Table 3.3-1 Food Safety Control System in Korea<sup>1</sup>**

Section	Production (Agriculture, Farming, Aquafarming)	Imported	Domestic
Agricultural Products	MIFAFF	KFDA	
Marine Products	MIFAFF	KFDA	
Livestock Products	MIFAFF	MIFAFF KFDA (Standards for Residual Harmful Substances)	
Bottled Mineral Waters	Ministry of Environment		
Alcoholic Beverages	National Tax Service KFDA (Standards for Residual Harmful Substances)		
School Meals	MEST Education Bureau KFDA (Safety Management for Group Feeding Facilities except for School Feeding Facilities)		

MIFAFF : Ministry for Food, Agriculture, Forestry and Fisheries

KFDA : Korea Food & Drug Administration

MEST : Ministry of Education, Science and Technology

KFDA<sup>2</sup> is a law-enforcement agency to promote the public health by ensuring the safety and efficacy of foods and pharmaceuticals, and to support the development of food and pharmaceutical industries. MIHWAF (Ministry of Health, Welfare and Family Affairs)<sup>3</sup> is responsible for policymaking and legislation related to food safety. Korean Fair Trade Commission (KFTC) and Korea Consumer Agency (KCA) are responsible for proper labeling and protecting consumers.

Unlike in Japan, there is no independent body for risk assessment in Korea. As presented in **Table 3.3-1**, KFDA and MIFAFF have both functions of risk management and risk assessment as two separate groups in the

<sup>1</sup>Cherl-Ho Lee; 2009 ILSI BeSeTo Meeting on Food Safety: Report of the First Meeting in Seoul, Korea, 16p, 2009

<sup>2</sup> KFDA ; Vision <http://eng.kfda.go.kr/index.php> (Accessed: 2010/03/16)

<sup>3</sup> MIHWAF; Food Safety Management

[http://english.mw.go.kr/front\\_eng/jc/sjc0101mn.jsp?PAR\\_MENU\\_ID=1003&MENU\\_ID=10030101](http://english.mw.go.kr/front_eng/jc/sjc0101mn.jsp?PAR_MENU_ID=1003&MENU_ID=10030101) (Accessed: 2010/03/16)

organizations intending to help consistent management and communication based on scientific assessment.

### 3.3.1.2 Related Acts and Regulations

Acts and regulations related to food include as follows; Food Sanitation Act, Health Functional Food Act, and Health Promotion Act set by MIHWAF; Monopoly Regulation, Fair Trade Act, and Fair Labeling and Adverting Act set by Korea Fair Trade Commission; Consumer Protection Act covered by Korea Consumer Agency. Among these acts and regulations, Food Sanitation Act is mainly related to food standards. The Act and related rules in English version can be seen on the Web site of KFDA<sup>4</sup>.

MIFAFF provides quality labeling standards for proper labeling of agricultural products, fisheries products and livestock products. Scopes for these products are as follows;

- Agricultural Quality Standards: All agricultural products other than processed products (to which Food Sanitation Act is applied )
- Marine Quality Standards: All marine products including processed products (Disease Control Law of Marine Animals is applied to live marine animals and plants imported from third country)
- Livestock Quality Standards: Meat, milk, egg and their processed products

Moreover, MIFAFF operates various quality certification systems for labeling and food safety. The systems and their marks are shown as follows.

- Specific labeling certification system: Good Agricultural Practices (105 items), organic processed foods, genetically modified foods



- Safety Certification System: HACCP, Traceability (agricultural products, livestock products, marine products), Livestock Products Safety Management System, SafeQ

<sup>4</sup> KFDA ; Relevant Rule <http://eng.kfda.go.kr/index.php> (Accessed: 2010/03/19)



### 3.3.2 Summary of Food Standards in Korea

Figure 3.3-1 is shown to compare existing food standards in Korea to Codex Standards as below. Food Code defined by Food Sanitation Act is mandatory standards including 29 food items. While, Korean Industrial Standards (KS) developed by Ministry of Knowledge Economy, Agency for Technology and Standards (KATS) is a voluntary standard like JAS standard to obtain certification mark. There are also MIFAFF standards covering some processed food, however we focused on 29 food items in Food Code and KS standards for further investigation. Meanwhile, food Additive Code<sup>5</sup> laying down specifications and their criteria for use (including analytical methods) is commonly applied to all food.

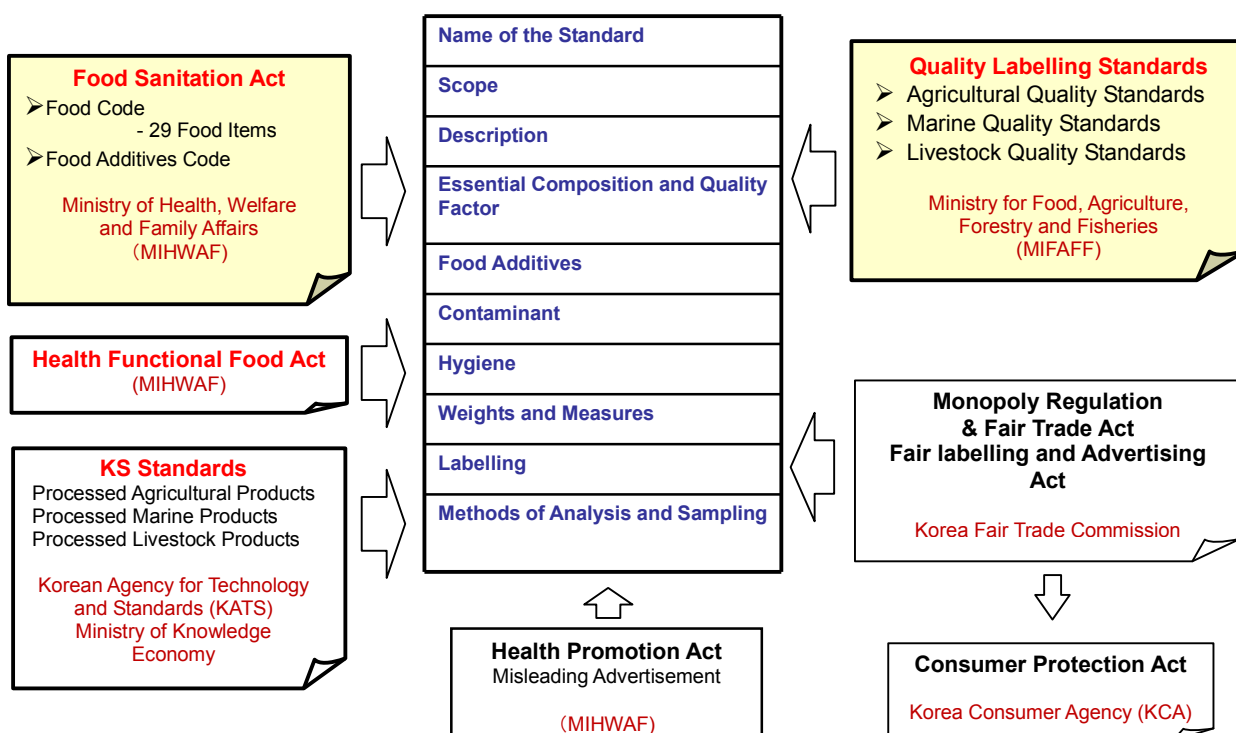


Figure 3.3-1 Summary Chart of Food Standards in Korea

<sup>5</sup> KFDA:Korea Food Additive Code (<http://fa.kfda.go.kr/foodadditivescode.html>) (Accessed: 2010/03/19)

### 3.3.2.1 Food Standards in Food Code

Food Code defines the followings; (1) Methods for food production, processing, preparation, usage, storage, as well as specifications of food composition, which are stipulated in Article 7-3 of Food Sanitation Act, (2) materials and production method for apparatus, container and packaging stipulated in Article 9-1, and (3) labeling standards for foods, food additives, apparatus, containers, packages and genetically modified foods stipulated in Article 10-1. Food Code provisions are shown below.

Article 1 General Provision

Article 2 General Standard and criteria for common foods

Article 3 Standards for long shell life foods

Article 4 Standards and criteria for common processed foods

Article 5 Commodity standards and criteria

Tables of commodity standards defined in Food Code are presented in FY2009 Report Tables 3.3-2 and 3.3-3.

### 3.3.2.2 Korean Industrial Standards (KS standards) defined by KATS<sup>6</sup>

KS standard is the set of national standards established under Industrial standardization Act. The use of KS mark (**Figure 3.3-2**) on the label is authorized to the products which meet KS standards through factory inspection and audit. KS standards provide three types of standards; "product standard" for product quality and measurement method, "procedure standard" for requirements for analysis, test, inspection, and standardization of measurement, and "horizontal standard" for specific technology and technology regime. These standards can be developed based on proposals from stakeholders, and be set through reviewing in Korean Industrial Standardization Committee. Total number of KS standards is over 22,000. Of them, 513 standards are related to food including "product standard" and "procedure standard" such as analytical methods for nutrients<sup>7</sup>. Lists of food "product standards" are presented in FY2009 Report Tables 3.3-4 to 3.3-7.



**Figure 3.3-2 KS mark**

<sup>6</sup> KATS (<http://kats.go.kr/english/index.asp>) (Accessed: 2010/03/19)

<sup>7</sup> KATS: Search for Korean Industrial Standards

([http://www.kats.go.kr/english/com/search\\_ks.asp?OlapCode=ATSU28Search](http://www.kats.go.kr/english/com/search_ks.asp?OlapCode=ATSU28Search)) (Accessed:2010/03/19)

### **3.3.3 Methods of Analysis for General Foods**

Methods of analysis for "General Foods" are shown in **Table 3.3-A**. Methods of analysis for the food categories taken up in the Case Study are described in the charts under the tables for the standards for those food categories (**Tables 3.3-8, 3.3-9 and 3.3-10**), respectively.

### **3.3.4 Contents of Food Standards**

In order to compare food standards set by Food Code to KS standard, instant noodles, carbonated soft drinks and prepared frozen foods were evaluated (**Tables 3.3-8, 3.3-9 and 3.3-10**).

**Table 3.3-A Methods of Analysis for General Foods**

Related legislation	Item	Specification	Analytical Methods	Reference
Food Sanitation Act	Foreign Material	<p>Food shall not contain unhygienic material to be mixed with foreign material.</p> <p>Iron filings as metallic foreign matter : &lt; not more than 10.0 mg/kg</p> <p>Any metallic particles : &lt;2.0 mm in length</p>	<p>Foreign materials: strainer method (fine powder), Filter method(Liquid), Wildeman Flask method (insect, animal fur/light materials), Precipitation method (mouse feces, etc. heavy matters)</p> <p>Metalic foreign matter : Prepare sample (500g powder, 1 kg liquid/paste in 5~6 L distilled water) → Use stick magnet (10,000 gause) for 10 min to collect → Dry and measure weight → Screen using sieve (1.4X1.4 mm) and measure the size of metalic materials.</p>	Korea Food Code (Article 10.9.2.1)
	Food poisoning bacteria	Not detectable in foods	<p>Systematic or individual analytical methods are generally as follows: (1) Aseptic Sample preparation (homogenization and serial dilution if necessary) → (2) enrichment with respective media → (3) Plate on respective selective media and pick suspected colonies → (4) confirm by further identification test</p>	Korea Food Code (Article 10-3) : <i>Salmonella</i> (10.3.11), <i>Staphylococcus aureus</i> (10.3.12), <i>Vibrio parahamolyticus</i> (10.3.13), <i>Clostridium perfringens</i> (10.3.14), <i>Listeria monocytogenes</i> (10.3.15), <i>E. coli</i> O157:H7 (10.3.16), <i>Yersinia enterocolitica</i> (10.3.17), <i>B. cereus</i> (10.3.18), <i>Camphylobacter jejuni</i> (10.3.19), <i>Clostridium botulinum</i> (10.3.20)
	Pesticide Maximum Residue Limits in foods	The residual standard is individually provided.	<p>Systematic or individual analytical methods are generally as follows: (1) Sample preparation → (2) Extraction with solvent → (3) Purification by chromatography → (4) Preparation of test solution → (5) Instrumental analysis: GC or GC-MS for volatile substances, LC or LC-MS for non-volatile substances etc.</p>	Korea Food Code (Article 10.4)

	Any veterinary drugs (including their metabolites) of which manufacture or import is not authorized due to safety or efficacy problems shall not be detected.	Not detectable in foods	<p>Nitrofurans and its derivatives(Furazolidone, Furaltadone, Nitrofurazone, Nitrofurantoin, Nitrovin, etc.), Chloramphenicol, Malachite green and its derivatives, Diethylstilbestrol, Dimetridazole, Clenbuterol, Vancomycin, Chlorpromazine, Thiouracil, Colchicine, Pyrimethamine, Medroxyprogesterone acetate</p> <p>Simple, Preliminary Test : Charm II receptor assay, Fluorescence Immunoassay, or Enzyme Immuno Assay</p> <p>Confirmation Test : Liquid/Gas Chromatography-Mass Spectrometer</p>	Korea Food Code (Article 10.5)
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**Table 3.3-8 Case Study 1 Instant Noodle**

	<b>Food Sanitation Act</b>	<b>KS standard</b>
Name of the Standard	Noodles	Instant Noodles*
Scope	Noodle; Naengmyeon (cold noodle); Dangmyeon (chinese noodle); Oil-fried noodle; Pasta	Fresh (uncooked) noodles (KS H 2506); Pre-cooked noodles (KS H 2507); Fried noodles (KS H 2508); Dried noodles (KS H 2505)
Description	Noodles refer to products made of cereals or starches by heat process or drying. Each items have own their descriptions.	Each items have own their descriptions.
Essential Composition and Quality Factor	Manufacturing and Processing Standards 1) For alcohol-treated products (not less than 1% of alcohol used), alcohol treatment should be performed in a manner that any residual alcohol does not adversely affect the quality. 2) Acid value and peroxide value of oil used for frying shall be not more than 2.5 and 50, respectively.	Dried noodle Max. Moisture content 11% (Dangmyeon 15%) Fried noodle Max. Moisture content 9% Acid value 1.5 Peroxide value 25
Food Additives	1) Tar colour: Should not be detected 2) Preservatives: Should not be detected Anything not specified follows "Korea Food Additives Code"	Tar colour should not be detected
Hygiene	* Containers/Packing condition * Storage Standard for cold noodle * Microbiological Criteria:  1) The number of Bacteria: Not more than 1,000,000 (Limited to alcohol-treated products) Not more than 100,000 (Limited to pasteurized products) 2) <i>E. coli</i> : Negative (Limited to alcohol-treated products) 3) Coliform group: Negative (Limited to pasteurized products)	* Containers/Packing condition * Microbiological Criteria: <i>E. coli</i> : Negative Coliform group: Negative The number of Bacteria: 1,000 (only for precooked noodle)
Labelling	Specific Labelling Methods required (Nutrition Facts, Pasteurized? Non-pasteurized ? Fried? Alcohol-treated?)	Labelling Standards follow "General Standard of Labelling for Processed Foods" (KS H 1101) Labelling should meet the requirement of Food Sanitation Act.

Methods of Analysis and Sampling	Determination of Acid/Peroxide Value, Tar, Preservatives, Bacteria, <i>E.coli</i> , Coliform	Sensory test (KS H ISO 6658) Determination of Water Content (KS H 1201) Determination of Coliform group (KS H ISO 4832) Determination of Micro-organism (KS H ISO 7251, KSH ISO 4833/4832/4831) Determination of Water and Acid/Peroxide value Anything not specified is handled in accordance with the Food Sanitation Act.
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\* Standards for instant noodles under KS Standards were deleted as of December 28, 2009 and 4 Standards for fresh noodles, pre-cooked noodles, fried noodles and dried noodles were newly adopted.

\* This table does not include basic details required for all foods.

<Methods of Analysis> Instant Noodle

Related legislation	Item	Specification	Analytical Methods	Reference
Food Sanitation Act	Bacteria	Not more than 1,000,000 (Limited to alcohol-treated products)	Plate count agar (35±1°C 24-48h)	Korea Food Code (Article 10.3.5.1)
		Not more than 100,000 (Limited to pasteurized products)	Plate count agar (35±1°C 24-48h)	
	<i>E. coli</i>	Negative (Limited to alcohol-treated products)	EC fermentation tube (44.5°C 24±2h) →Gas generation: Presumptive test positive→EMB medium (35±1°C 24±2h)→Lactose broth fermentation tube and nutrient agar. The lactose broth fermentation tube(35±1°C 48±3h): gas generation→The nutrient agar(35±1°C 24±2h): microscopic test→Gram-negative nonspore-forming bacilli: <i>E. coli</i> positive	Korea Food Code (Article 10.3.8)
	Coliform	Negative (Limited to pasteurized products)	LB fermentation tube (35±1°C 48±3h) →Gas generation: Presumptive test positive→BGLB fermentation tube (35±1°C 48±3h) →Gas generation→EMB medium (35±1°C 24±2h) → Typical colony: Confirmative test positive →Lactose broth fermentation tube and nutrient agar . The lactose broth fermentation tube(35±1°C 48±3h): gas generation→The nutrient agar(35±1°C 48±3h): microscopic test→Gram-negative nonspore-forming bacilli: Coliform positive	Korea Food Code (Article 10.3.7)
	Acid value of oil	Not more than 2.5	Acid value measurement method by titration	Korean Food Code (Article 10, 1.1.5.3.1)
	Peroxide value of oil	Not more than 50	Peroxide value measurement method by titration	Korean Food Code (Article 10, 1.1.5.3.5)

KS Standard	<i>E. coli</i>	Negative	EC fermentation tube (44.5°C 24±2h) →Gas generation: Presumptive test positive→EMB medium (35±1°C 24±2h)→Lactose broth fermentation tube and nutrient agar. The lactose broth fermentation tube(35±1°C 48±3h): gas generation→The nutrient agar(35±1°C 24±2h): microscopic test→Gram-negative nonspore-forming bacilli: <i>E.coli</i> positive	KS Determination of Micro-organism (KS H ISO 7251, KS H ISO 4831~4833)
	Coliform group	Negative	LB fermentation tube (35±1°C 48±3h) →Gas generation: Presumptive test positive→BGLB fermentation tube (35±1°C 48±3h) →Gas generation→EMB medium (35±1°C 24±2h) → Typical colony: Confirmative test positive →Lactose broth fermentation tube and nutrient agar . The lactose broth fermentation tube(35±1°C 48±3h): gas generation→The nutrient agar(35±1°C 48±3h): microscopic test→Gram-negative nonspore-forming bacilli: Coliform positive	KS Determination of Micro-organism (KS H ISO 7251, KS H ISO 4831~4833)
	Bacteria	1000 (only for precooked noodle)	Plate count agar (35±1°C 24-48h)	KS Determination of Micro-organism (KS H ISO 7251, KS H ISO 4831~4833)
	Max moisiture	9%	Moisture measurement by air oven method	Determination of Water Content (KS H 1201)
	Acid value of oil	Not more than 1.5	Acid value measurement method by titration	Determination of Acid/Peroxide Valule
	Peroxide value of oil	Not more than 25	Peroxide value measurement mothod by titration	

**Table 3.3-9 Case Study 2 Carbonated Soft Drinks**

	<b>Food Sanitation Act</b>	<b>KS standard</b>
Name of the Standard	Carbonated Beverages	Carbonated Soft Drinks (KS H 2016)
Scope	Carbonated Beverages; Carbonated Water	Carbonated Beverages; Carbonated Water
Essential Composition and Quality Factor	Pressure of carbonic acid gas (kg/cm <sup>2</sup> ) ① Carbonated water: Not less than 1.0 ② Carbonated beverage: Not less than 0.5 Lead (mg/kg): Not more than 0.3 Cadmium (mg/kg): Not more than 0.1 Tin (mg/kg): Not more than 150 (Limited to canned products)	Must have satisfactory colour and flavour Must not have off-taste and off-odour Pressure of carbonic acid gas (kg/cm <sup>2</sup> ) ① Carbonated water: Not less than 2.5 ② Carbonated beverage: Not less than 2.0 Lead (mg/kg): Not more than 0.3 Cadmium (mg/kg): Not more than 0.1 Tin (mg/kg): Not more than 150 (Limited to canned products) Packaging standards: The container shall not be swollen, deformed or rust, requiring complete sealing and appropriate degree of vacuume.
Food Additives	Preservative: Any preservative except the followings should not be detected. (Sorbic acid, Sodium sorbate, Potassium sorbate, Calcium sorbate) Not more than 0.6g/kg as sorbic acid. (But it should not be detected in carbonated water)	
Hygiene	The number of Bacteria: Not more than 100 Coliform group: Negative	The number of Bacteria: Not more than 100 Coliform group: Negative
Labelling	Specific labelling methods 1) Products shall be labeled as either carbonated beverages or carbonated water. 2) If the calorie per 400ml is 2kcal or lower, the product can be labeled as "Diet". 3) Nutrition Facts required.	Labelling Standards follow "General Standard of Labelling for Processed Foods" (KS H 1101)

Methods of Analysis	Gas Pressure Lead and Cadmium, Tin The number of Bacteria Coliform group Preservatives	Gas Pressure, Lead and Cadmium Tin, The number of Bacteria, Coliform group General testing methods for canned food (KS H2146) Sensory test (KS H ISO 6658) Determination of Micro-organism (KS H ISO 7251, KSH ISO 4833/4832/4831) Anything not specified is handled in accordance with the Food Sanitation Act.
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<Methods of Analysis> Carbonated Soft Drinks

Related legislation	Item	Specification	Analytical Methods	Reference
Food Sanitation Act	Lead (mg/kg)	Not more than 0.3	Wet degradation method, Dry incineration methodour Solvent Extraction method → Inductively Coupled Plasma Spectrometry (ICP)	Korea Food Code (2010, 7.1.2.1)
	Cadmium (mg/kg)	Not more than 0.1	Wet degradation method, Dry incineration methodour Solvent Extraction method → Inductively Coupled Plasma Spectrometry (ICP)	Korea Food Code (2010, 7.1.2.2)
	Tin (mg/kg)	Not more than 150 (Limited to canned products)	Wet degradation methodour Dry incineration method → Salicylidenamino-2-thiophenol (SATP) methodour Polarographic analysis	Korea Food Code (2010, 7.1.2.6)
	Bacteria	Not more than 100/ml	Plate count agar (35±1°C 24-48h)	Korea Food Code (10.3.5.1)
	Coliform	Negative (Limited to pasteurized products)	LB fermentation tube (35±1°C 48±3h) → Gas generation: Presumptive test positive → BGLB fermentation tube (35±1°C 48±3h) → Gas generation → EMB medium (35±1°C 24±2h) → Typical colony: Confirmative test positive → Lactose broth fermentation tube and nutrient agar. The lactose broth fermentation tube (35±1°C 48±3h): gas generation →The nutrient agar (35±1°C 48±3h): microscopic test→Gram-negative nonspore-forming bacilli: Coliform positive	Korea Food Code (Article 10.3.7)

**Table 3.3-10 Case Study 3 Frozen Foods**

	<b>Food Sanitation Act</b>	<b>KS standard</b>
Name of the Standard	Frozen Foods	Frozen Foods
Scope		Frozen dumpling (KS H 4001) Frozen croquette (KS H 4002) Frozen raw breaded shrimp (KS H 4003) Frozen pork cutlet (KS H 4004) Frozen fish cutlet (KS H 6032)
Description	<p>1. Product Definition "Frozen food" means a food made by filling the manufactured, processed, cooked food into container and packaging materials after freezing treatment for the purpose of long-term storage.</p> <p>(1) Frozen food not requiring heating process before consumption: Frozen food that can be consumed without a separate heating process.</p> <p>(2) Frozen food requiring heating process before consumption: Frozen food that can be consumed only after a separate heating process.</p> <p>2. Manufacturing and Processing Standards</p> <p>(1) Product before chilling shall be sterilized in a method, in which the temperature at the center of the product is not less than 63°C for 30 minutes, or the equivalent.</p> <p>(2) Thawing of refrigerated raw material shall be hygienically performed.</p> <p>3. Preservation and Distribution Standards</p> <p>(1) Preservation temperature of frozen chilled food means, except for separately specified in this code, that frozen temperature is not higher than -18°C and chilled temperature is 0~10°C.</p> <p>(2) After frozen food is thawed, it shall not be distributed as room temperature food or chilled food, and the room temperature food or chilled food shall not be distributed as frozen food.</p> <p>(3) Chilled food shall not be also distributed at room temperature (except fruit/vegetable).</p> <p>(4) Thawed food shall not be again frozen.</p> <p>(5) Transport of frozen or cold-storage products shall be performed with use of a vehicle able to maintain the specified temperature or in the equivalent or better manner.</p>	Each food items have their own Descriptions and Standards.



	Food Sanitation Act				KS standard						
Food Additives	The products shall meet the requirements of Korea Food Additives Code										
Hygiene		Frozen food not requiring heating before consumption	Frozen food requiring heating before consumption			Frozen dumpling	Frozen croquette	Frozen raw bread shrimp	Frozen pork cutlet	Frozen fish cutlet	
			Heated food before freezing	Not-heated food before freezing							
	Bacterial Counts (cfu/g)	Not more than 100,000 (except fermented products or those added with lactic acid bacteria)	Not more than 100,000 (except fermented products or those added with lactic acid bacteria)	Not more than 3,000,000 (except fermented products or those added with lactic acid bacteria)		Bacterial Counts (cfu/g)	Not more than 1,000	—	—	Not more than 3,000,000 (but heated /not-heated food before freezing <100,000)	Not more than 100,000
	Coliform Group (cfu/g)	Not more than 10	Not more than 10	—		Coliform Group (cfu/g)	Not more than 10	—	—	Not more than 10 (only for heated food before freezing)	Negative (only for heated food before freezing)
	<i>E. coli</i>	—	—	Negative		<i>E. coli</i>	—	Negative	—	—	Negative (only for non-heated food before freezing)
Lactic acid bacteria	Not less than labeled count (if only products added with lactic acid bacteria)										

	<b>Food Sanitation Act</b>	<b>KS standard</b>
Labelling	<p>Frozen food shall be labeled according to the following criteria:</p> <ol style="list-style-type: none"> <li>(1) It shall be labeled as either frozen food good to eat unheated or frozen food to eat after heated.</li> <li>(2) Frozen food to eat after heating shall be additionally labeled as either "food heated before freezing" or "food unheated before freezing" depending on whether it was heat-treated, etc. Fermented products or products containing lactic acid bacteria shall indicate the number of yeasts or lactic acid bacteria.</li> <li>(3) Frozen food shall indicate the methods of storage in freezing conditions and the methods of thawing for cooking.</li> <li>(4) Products that require cooking or heating shall indicate the methods of cooking or heating.</li> <li>(5) The label shall not be done in a manner in which consumers can be misled into thinking the whole of the raw materials is meat or produce. However, this may not apply if the quantity of meat or produce is labeled on the same position as that of the product name.</li> <li>(6) If two or more kinds of meats are used as raw materials, the name of a single kind of meat shall not be used as the product name. However, this may not apply if the quantity of the meat is labeled on the same position as that of the product name.</li> </ol>	<p>Labelling Standards follow "General Standard of Labelling for Processed Foods" (KS H 1101)</p>
Methods of Analysis and Sampling	<p>Determination of Bacteria counts, <i>E.coli</i>, Coliform group, Lactic acid bacteria.</p>	<p>Sensory and Physical Examination (KS A 7002)  Determination of Water Content (KS H 1201)  Determination of Coliform group (KS H ISO 4832)  Determination of Micro-organism (KS H ISO 4833)  Anything not specified is handled in accordance with the Food Sanitation Act.</p>

<Methods of Analysis> Frozen Foods

Sub-category	Related legislation	Item	Specification	Analytical Methods	Reference
Without heating	Food Sanitation Act	Bacteria	Not more than 100,000/g (Except for fermentative or lactic acid bacteria added products)	Plate count agar (35±1°C 24-48h)	Korea Food Code (10.3.5.1)
		Coliform	Not more than 10/g	Desoxycholate agar (35±1°C 20±2h) or Dehydrated coliform film (35±1°C 24±2h)	Korea Food Code (Article 10.3.7)
		Lactic acid bacteria	More than indicating quantity	BCP plate count agar (35-37°C 72±3h)	Korea Food Code (Article 10.3.9)
After heating (heated before freezing)	Food Sanitation Act	Bacteria	Not more than 100,000/g (Except for fermentative or lactic acid bacteria added products)	Plate count agar (35±1°C 24-48h)	Korea Food Code (10.3.5.1)
		Coliform	Not more than 10/g	LB fermentation tube (35±1°C 48±3h) →Gas generation: Presumptive test positive →BGLB fermentation tube (35±1°C 48±3h) →Gas generation→EMB medium (35±1°C 24±2h) →Typical colony: Confirmative test positive →Lactose broth fermentation tube and nutrient agar . The lactose broth fermentation tube (35±1°C 48±3h): gas generation →The nutrient agar (35±1°C 48±3h): microscopic test →Gram-negative nonspore-forming bacilli: Coliform positive	Korea Food Code (Article 10.3.7)
		Lactic acid bacteria	More than indicating quantity	BCP plate count agar (35-37°C 72±3h)	Korea Food Code (Article 10.3.9)

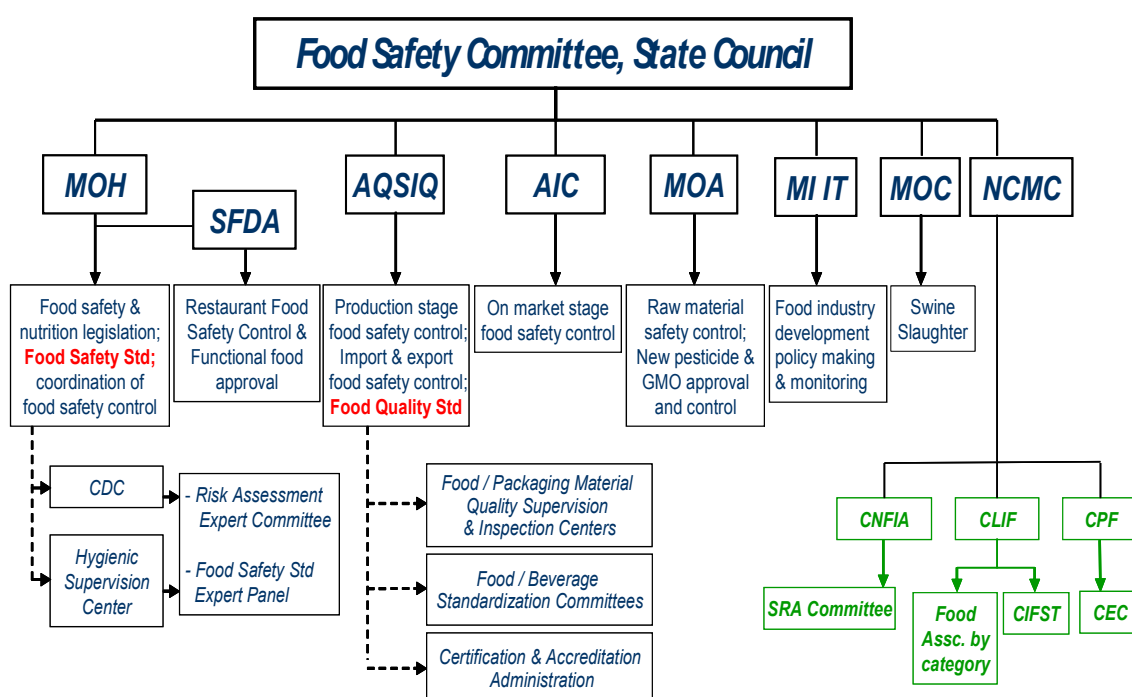
After heating (not heated before freezing)	Food Sanitation Act	Bacteria	Not more than 100,000/g (Except for fermentative or lactic acid bacteria added products)	Plate count agar (35±1°C 24-48h)	Korea Food Code (10.3.5.1)
		<i>E. coli</i>	Negative (Limited to alcohol-treated products)	EC fermentation tube (44.5°C 24±2h) →Gas generation: Presumptive test positive →EMB medium (35±1°C 24±2h) →Lactose broth fermentation tube and nutrient agar. The lactose broth fermentation tube(35±1°C 48± 3h): gas generation →The nutrient agar(35±1°C 24±2h): microscopic test →Gram-negative nonspore-forming bacilli: <i>E.coli</i> positive	Korea Food Code (Article 10.3.8)
		Lactic acid bacteria	More than indicating quantity	BCP plate count agar (35-37°C 72±3h)	Korea Food Code (Article 10.3.9)

### 3.4 China

#### 3.4.1 Regulatory Framework on Foods

Framework of food administration in China is stipulated by "Food Safety Law of the People's Republic of China" which was promulgated in February 28, 2009 and went into effect in June 1, 2009.

As there have been various kinds of food standards in China, food companies confused which standard should be complied with. Since Food Safety Law went into effect, it is expected that unification of standards to develop national standard produces drastic improvements. The law comprehensively covers areas from food hygiene to food safety, and clearly stipulates clarification of responsibility of ministries in charge of food issues, newly setting of food recall system, sections responsible for monitoring, control and assessment of risk. State Council decided to set up "Food Safety Committee" according to the law to establish system shown below in **Figure 3.4-1** with the purpose of securing food safety and ensuring the public health and safety.



**Figure 3.4-1 Food administration system established according to Food Safety Law**

Duties of relevant ministries responsible for food standards are stipulated by Food Safety Law as follows.

➤ **Ministry of Health (MOH)**

It is responsible for overall coordination of food safety, risk assessment,

development of food safety standard, release of information on food safety etc.

The lower organizations include Administration of Quality supervision (to set food safety standards and inspection methods in food manufacture and their supervision), The State Administration for Industry and Commerce (to supervise food distribution), and State Food and Drug Administration (to supervise food service and to approve functional foods)

➤ Administration of Quality Supervision, Inspection and Quarantine (AQSIQ)

It is responsible for Inspection and Quarantine for Imported and Exported items.

➤ Ministry of Agriculture (MOA)

It is in charge of setting maximum amount of pesticide residues in foods and residues of veterinary medicinal products, and establishment of analytical methods. It works together with Administration of health for implementation.

### 3.4.2 Summary of Food Standards in China

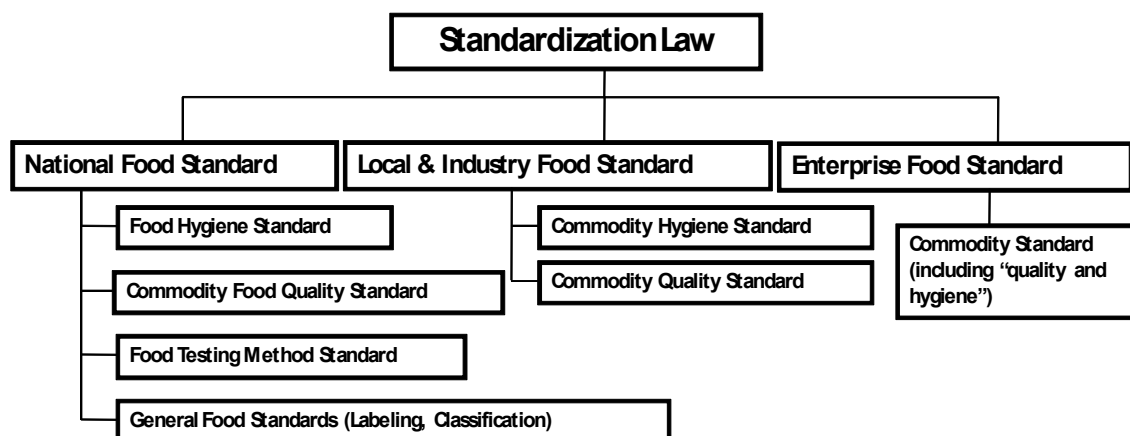
Chinese Food Safety National Standards are mandatory standards established and issued by Health Administration Department of the State Council. National standard code (Guo jia Biao zhun, GB) is provided by Standardization Administration Department of the State Council, and is published after reviewed by Food Safety National Standards Review Board.

National Codes applied to areas other than food are published through the same process by relevant agencies, then, are kept by Standardization Administration of China (SAC). First 2 or 3 alphabets of National Standard Code are common for all industrial areas.

National codes are published as GB (Mandatory standard) or GB/T (Recommended standard). The following code numbers allow you to identify standard. SAC issues list of all National Standards (<http://www.sac.gov.cn/>). Examples of GB standards for foods include GB 2760 "Hygiene standard for use of food additives" and GB 7718 "Labeling standard for packaging containers".

The overall system structure for food standards in China characterizes three levels of standards shown in **Figure 3.4-2**; National standard, Industry & Local Standard defined as regional standard and industry associations' voluntary standard, and Enterprise Standard. These all standards are

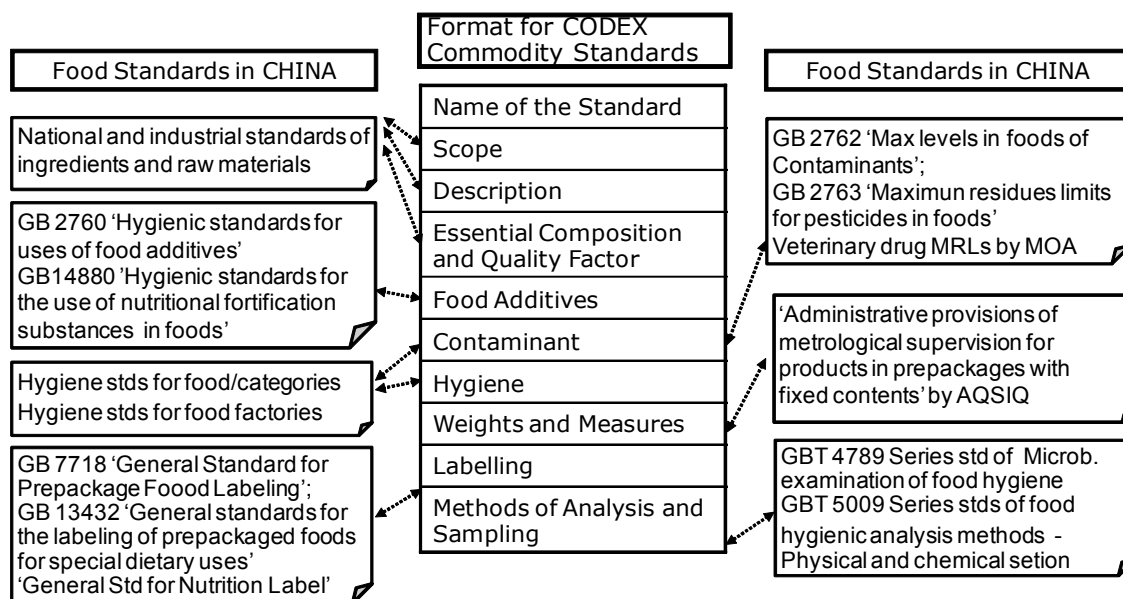
expected to be unified as national standards, though, standardization requires more time.



**Figure 3.4-2 Three levels of standards in China**

In case of a certain food category defined by National Standard, the Standard should be complied. Penalty provisions against violation are also stipulated clearly. For food without National Standard, Industry & Local Standard is applied. In this case, the health administrative department of each province, autonomous district, or municipalities directly under the Central Government reviews the food standard, confirms it pursuant to National Standard, and submits it to Health Administration of State Council. For food with only Enterprise Standard, each company shall submit the standard to the health administrative department of each province, autonomous region, municipalities directly under the Central Government and complies with it.

Summarizing the above, summary chart of food standards existing in China is presented in **Figure 3.4-1** to compare with Codex Standard. For items in Codex Standard, for example, "Scope", "Description" and "Essential Composition and Quality Factor" are defined by corresponding GB standard. GB 2760 (Hygienic standards for uses of food additives) and GB 14880 (Hygienic standards for use of nutritional fortification substances in foods) correspond to "Food Additives", GB 2762 (Max levels in foods of Contaminants) and GB 2763 (Maximum residues limits for pesticides in foods) correspond to "Contaminant". Basically, GB standards almost completely correspond to Codex Standards. For "Weights and Measures", JJF1070 pursuant to Measurement Act like in Japan, and standards set by AQSIQ shall be applied.



**Figure 3.4-3 Summary of Food Standards in China**

For more specific examples, see case studies described in 3.4.4 Commodity Standards below. Plotting the corresponding items of GB standards and other standards on the Codex Standards, it was found that the Chinese food standards relatively correspond to the Codex Standards. Though the same may not be said for all foods, the Chinese standards are well organized from the viewpoint of consistency with Codex Standards.

### 3.4.3 Methods of Analysis for General Foods

Methods of analysis for "General Foods" are shown in **Table 3.4-A**. Methods of analysis for the food categories taken up in the Case Study are described in the charts under the tables for the standards for those food categories (**Tables 3.4-1, 3.4-2 and 3.4-3**), respectively.

### 3.4.4 Commodity Standards

In order to compare consistency between Codex food standards, GB standards and other relevant standards, we investigated for instant noodles, carbonated soft drinks and prepared frozen foods.



**Table 3.4-A Methods of Analysis for General Foods**

Related legislation	Item	Specification	Analytical Methods	Reference
GB 4789-2010 National Food Safety Standard Food Microbiological examination	Aerobic Plate Count	This standard is to state the analytical method for pathogens and hygiene indicator microbes. The specific limitation in certain food category will be stated in separate standards of category.	Difference with FDA/BAM, Chapter 3: Aerobic plate count, 2001 <ul style="list-style-type: none"> <li>- Appropriate enumeration scope of plate counts computed change to 30 cfu ~ 300 cfu from 25 cfu~250 cfu.</li> <li>- Incubate temperature change to 36 ± 1°C from 35 ± 1°C.</li> <li>- 10 times dilution, change to transferring 1ml of previous dilution to 9 ml of diluent from transferring 10ml of previous dilution to 90 ml</li> <li>- do not adopt the Spiral Plate Method</li> </ul>	GB 4789.2-2010 National Food Safety Standard Food Microbiological examination: Aerobic plate count
	Enumeration of coliforms		Difference with FDA/BAM, Chapter 4: Enumeration of Escherichia coli and the coliform bacteria, 2002 <ul style="list-style-type: none"> <li>- Appropriate enumeration scope of plate counts computed change to 15 cfu ~ 150 cfu from 25 cfu~250 cfu.</li> <li>- Incubate temperature change to 36 ± 1°C from 35 ± 1°C.</li> <li>- Sample size change to 25g(or 25ml) form 50g(or 50ml)</li> </ul>	GB 4789.3-2010 National Food Safety Standard Food Microbiological examination: Enumeration of coliforms
	Salmonella		Same as FDA/BAM, Chapter 5: Salmonella, 2003 and AOAC official Method 967.26, 967.27,967.28.	GB 4789.4-2010 National Food Safety Standard Food Microbiological examination: Salmonella

	<i>Staphylococcus aureus</i>		<p>total 3 Methods</p> <p>1. The First Method: Qualitative Analysis, it refers to AOAC office Method 987.09 <i>Staphylococcus aureus</i> in foods most probable number method for isolation and enumeration and ISO 6888-1: 1999 Microbiology of food and animal feeding stuffs- Horizontal method for the enumeration of coagulase-positive staphylococci, <i>Staphylococcus aureus</i> and other species - Part1 : Technique using Baird-Parker agar medium</p> <p>2. Second Method: Modified by AOAC 975.55 <i>Staphylococcus aureus</i> in foods surface plating method isolation and enumeration, 1976 and ISO 6888-1:1999, the difference are:</p> <ul style="list-style-type: none"> <li>- Change the AOAC sampling size to 25g (or 25ml) from 50g (or 50ml)</li> <li>- Modified the ISO computational formula</li> </ul> <p>3. The third Method: modified by AOAC 987.07, the difference is:</p> <ul style="list-style-type: none"> <li>- Change the AOAC sampling size to 25g (or 25ml) from 50g (or 50ml)</li> </ul>	<p>GB 4789.10-2010 National Food Safety Standard Food Microbiological examination: <i>Staphylococcus aureus</i></p>
	Enumeration of moulds and yeasts		<p>Sampling Preparation, Dilution, plating and incubation of sampling (Potato dextrose agar, or Rose bengal medium) , counting of plate</p>	<p>GB 4789.15-2010 National Food Safety Standard Food Microbiological examination: Enumeration of moulds and yeasts</p>

<i>Listeria monocytogenes</i>		<p>Difference with FDA/BAM, Chapter 10, <i>Listeria monocytogenes</i>, 2002</p> <ul style="list-style-type: none"> <li>- Enrichment Medium, LB Broth replaced of BLEB Broth</li> <li>- Isolation Medium, PALCAM replaced of OXA, add CHROMAGAR <i>Listeria</i> colouration media</li> <li>- Add the preliminary screening step</li> <li>- Incubate temperature change to <math>36 \pm 1^\circ\text{C}</math> from <math>35 \pm 1^\circ\text{C}</math>.</li> </ul>	<p>GB 4789.30-2010 National Food Safety Standard Food Microbiological examination: <i>Listeria monocytogenes</i></p>
Lactic acid bacteria		<p>Presumptive test (Sampling Preparation, Dilution, plating and incubation of sampling (MRS agar, MC agar), counting of plate)→Identification test (MRS agar plate or MC agar plate)→ Report</p>	<p>GB 4789.35-2010 National Food Safety Standard Food Microbiological examination: Lactic acid bacteria</p>
<i>Enterobacter sakazakii</i>		<p>First method, Modified by ISO/TS 22964 : 2006 (Milk and milk products -Detection of <i>Enterobacter sakazakii</i>), the difference are:</p> <ul style="list-style-type: none"> <li>- Incubate temperature change to <math>36 \pm 1^\circ\text{C}</math> from <math>35 \pm 1^\circ\text{C}</math></li> <li>- <i>Enterobacter sakazakii</i> isolated plate chang to DFI from ESIA, incubate temperature change to <math>36 \pm 1^\circ\text{C}</math> from <math>44 \pm 1^\circ\text{C}</math>.</li> <li>- decide 100g (or 100ml) as the basic detection unit.</li> </ul> <p>Secod Method, it is refer to FDA, Isolation and enumeration of <i>Enterobacter sakazakii</i> form dehydrated powdered infant formula (July 2002)</p>	<p>GB 4789.40-2010 National Food Safety Standard Food Microbiological examination: <i>Enterobacter sakazakii</i></p>

Maximum levels of contaminants in food;	Lead(Pb)	cereals: 0.2mg/kg; legume: 0.2mg/kg; tubes: 0.2mg/kg; meat and poultry: 0.2mg/kg; edible meat and poultry offal: 0.5mg/kg; fish: 0.5mg/kg; fruit: 0.1mg/kg; small fruit, berry and grape: 0.2mg/kg; vegetable excluding bulb vegetable, leafy vegetable, fungi: 0.1mg/kg; bulb vegetable: 0.3mg/kg; leafy vegetable: 0.3mg/kg; fresh milk: 0.05mg/kg; infant formula: 0.02mg/kg; fresh eggs: 0.2mg/kg; wines: 0.2mg/kg; fruit juice: 0.05mg/kg; tea: 5mg/kg	<ol style="list-style-type: none"> <li>1. Graphite furnace atomic absorption spectrometry Sample preparation → ashing or digesting → standard solution preparation → determination by instrument.</li> <li>2. Hydride Generation-atomic Fluorescence Spectrophotometry Sample preparation → digestion → standard solution preparation → determination</li> <li>3. Flame Atomic Absorption Spectrometric analysis (FAAS) Sample preparation → extraction and separation → determination by instrument</li> <li>4. Double sulphur hydrazone colourimetry Sample preparation → digestion → standard solution preparation → determination by spectrophotometer</li> <li>5. single-sweep polarography Sample preparation → digestion → standard solution preparation → determination by polarographic analyze</li> </ol>	GB 5009.12-2010 National food safety standard determination of lead in foods
Maximum levels of mycotoxins in foods				

	Cadmium (Cd)	cereals - rice, soybean: 0.2mg/kg, peanut: 0.5mg/kg, flour: 0.1mg/kg, coarse cereal (corn, millet, sorghum, tubers): 0.1mg/kg; meat and poultry: 0.1mg/kg; meat and poultry liver: 0.5mg/kg; meat and poultry kidney: 1.0mg/kg; fruit: 0.05mg/kg; root and tuber vegetable excluding celery: 0.1mg/kg; leafy vegetable, celery, fungi: 0.2mg/kg; other vegetable: 0.05mg/kg; fish: 0.1mg/kg; fresh eggs: 0.05mg/kg	<ol style="list-style-type: none"> <li>1. Graphite furnace atomic absorption spectrometry Sample preparation→dry ashing or wet digestion→standard solution preparation →determination by instrument</li> <li>2. Atomic Absorption Spectrometry (AAS) <ol style="list-style-type: none"> <li>2.1 Potassium iodide -4-methyl pentanone-2 Sample preparation→extraction and separation→determination by instrument</li> <li>2.2 Double sulphur hydrazone-butyl acetate Sample preparation→extration and separation→determination by instrument</li> </ol> </li> <li>3. Colourimetric method Sample preparation→Digestion→determination by spectrophotometer</li> <li>4. Atomic Fluorescence Spectrometric (AFS) Samplepreparation→dry ashing or wet digestion→standard solution preparation →determination by AFS</li> </ol>	GB/T 5009.15-2003 Determination of cadmium in foods
	Mercury (Hg)	cereals: 0.02mg/kg total Hg; tubes (potato, sweet potato), vegetable, fruit: 0.01mg/kg total Hg; fresh milk: 0.01mg/kg total Hg; meat, liquid eggs: 0.05mg/kg total Hg; fish excluding carnivorous fish and other aquatic products: 0.5mg/kg methyl Hg; carnivorous fish (shark, tuna, etc.): 1.0mg/kg methyl Hg	<ol style="list-style-type: none"> <li>1. The determination of total mercury <ol style="list-style-type: none"> <li>1.1 Atomic fluorescence spectrophotometric Digestion→Preparation of standard solution→Determination by AFS</li> <li>1.2 Cold atomic absorption spectrometry Sample preparation→Digestion→Instrumental analysis</li> <li>1.3 Double sulphur hydrazone colourimetry Digestion→Determination by visible spectrophotometer</li> </ol> </li> <li>2. Determination of methylmercury <ol style="list-style-type: none"> <li>2.1 Gas Chromatography (GC) or Cold Vapour Atomic Absorption Sample preparation→extraction→centrifugal or filtration→elution→extraction→determination by instrument</li> </ol> </li> </ol>	GB/T 5009.17-2003 Determination of total and organic-mercury in foods

	Arsenic(As)	cereals - rice: 0.15mg/kg inorganic As; flour: 0.1mg/kg inorganic As; coarse cereals: 0.2mg/kg inorganic As; vegetable: 0.05mg/kg inorganic As; fruit: 0.05mg/kg inorganic As; meat and poultry: 0.05mg/kg inorganic As; eggs: 0.05mg/kg inorganic As; milk powder: 0.25mg/kg inorganic As; fresh milk: 0.05mg/kg inorganic As; legume: 0.1mg/kg inorganic As; alcohol: 0.05mg/kg inorganic As; fish: 0.1mg/kg inorganic As; alga: 1.5mg/kg inorganic As; shellfish, prawn, crab (calculated on fresh weight): 0.5mg/kg inorganic As; shellfish, prawn, crab (calculated on dry weight): 1.0mg/kg inorganic As; other aquatic products (calculated on fresh weight): 0.5mg/kg inorganic As; edible oil: 0.1mg/kg total As; fruit juice and fruit pulp: 0.2mg/kg total As; cocoa butter and chocolate: 0.5mg/kg total As; other cocoa products: 1.0mg/kg total As; sugar: 0.5mg/kg total As	1. The determination of total arsenic 1.1 Hydride Generation-atomic Fluorescence Spectrophotometry Wet digestion or dry ashing→standardard solution preparation→determination by AFS 1.2 Silver salt method Wet digestion or dry ashing→standardard solution preparation→determination by spectrophotometer 1.3 Method of Spot of arsenic Wet digestion or dry ashing→standardard solution preparation→determination by arsenic apparatus 1.4 Borohydride Reduction Colourimetric Method Wet digestion or dry ashing→standardard solution preparation→determination by spectrophotometer 2. The determination of abio-arsenic 2.1 Hydride Generation-atomic Fluorescence Spectrophotometry The extraction of abio-arsenic→standardard solution preparation→determination by AFS 2.2 Silver salt method The extraction of abio-arsenic→standardard solution preparation→determination by spectrophotometer	GB/T 5009.11-2003 Determination of total and inorganic arsenic in foods
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	Chromе(Cr)	cereals: 1.0mg/kg; legume: 1.0mg/kg; tubes: 0.5mg/kg; vegetable: 0.5mg/kg; fruit: 0.5mg/kg; meat including liver and kidney: 1.0mg/kg; fish and shellfish: 2.0mg/kg; eggs: 1.0mg/kg; fresh milk: 0.3mg/kg; milk powder: 2.0mg/kg	1. Graphite furnace atomic absorption spectrometry Sample preparation→wet digestion→constant volume→standard solution preparation →determination by atomic absorption spectrophotometer 2. The oscillopolarographic method Sample preparation→standard solution preparation→determination by oscillographic polarograph	GB/T 5009.123-2003 Determination of chromium in foods
	Aluminum(Al)	flour-made products: 100mg/kg	Sample preparation→digestion→standard solution preparation→determination by spectrophotometer	GB/T 5009.182-2003 Determination of aluminium in flour products
	Selenium(Se)	cereals: 0.3mg/kg; legume and legume products: 0.3mg/kg; vegetable: 0.1mg/kg; fruit: 0.05mg/kg; meat and poultry: 0.5mg/kg; kidney: 3.0mg/kg; fish: 1.0mg/kg; eggs: 0.5mg/kg; fresh milk: 0.03mg/kg; milk powder: 0.15mg/kg	1. Hydride Generation-atomic Fluorescence Spectrophotometry Sample preparation→digestion→standard solution preparation→determination by atomic fluorescence spectroscopy 2. Fluorescent method Sample preparation→digestion→extraction →standard solution preparation→determination by fluorescence spectrophotometer	GB/T 5009.93-2010 National food safety standard determination of selenium in foods
	Fluorin(Fi)	cereals - rice, flour: 1.0mg/kg, other cereals: 1.5mg/kg; legume: 1.0mg/kg; vegetable: 1.0mg/kg; fruit: 0.5mg/kg; meat: 2.0mg/kg; freshwater fish: 2.0mg/kg; eggs: 1.0mg/kg	1. Diffusion-Fluoring Reagent Colourimetric Analysis Sample preparation→diffusion→extraction and filtration→ determination by visible spectrophotometer 2. Ashing and Distilling-Fluoring Reagent Colourimetric Analysis Sample preparation→fixation of fluorin → ashing → distilling→determination by visible spectrophotometer 3. Fluorine ion selective electrode	GB/T 5009.18-2003 Determination of fluorine in foos

			Sample preparation→standard solution preparation→determination by calomel electrode	
	Benzo(a)pyrene	baked smoked meat: 5µg/kg; vegetable oil: 10µg/kg; cereals: 5µg/kg	1. Fluorescence spectrophotometry Extraction→purification→separation→determination by Fluorescence spectrophotometry 2. Visual colourimetry Extraction→purification→separation→determination by ultraviolet light	GB/T 5009.27-2003 Determination of benzo(a)pyrene in foods
	N-nitrosamine	seafood: 4µg/kg N-dimethyl nitrosamine, 7µg/kg N-diethyl nitrosamine; meat products: 3µg/kg N-dimethyl nitrosamine, 5µg/kg N-diethyl nitrosamine	1. Gas Chromatography- Thermal Energy Analyzer (GC-TEA) Extraction→concentration →determination by GC-TEA 2. Gas chromatograph-Mass Spectrometer (GC-MS) Distill→extraction and purification→concentration→determination by GC-MS	GB/T 5009.26-2003 Determination of N-nitrosamines in foods
	Polychlorodiphenyls	marine fish, shellfish, prawn and alga products (edible parts): 2.0mg/kg polychlorodiphenyls, 0.5mg/kg PCB138, 0.5mg/kg PCB153	1. Gas Chromatography/Mass Spectrometry with Isotopic Dilution Method Sample preparation → extraction → purification → separation→concentration→determination by GC-MS 2. Gas Chromatography (GC) Extraction→purification→concentration→determination by GC	GB/T 5009.190-2006 Determination of indicator polychlorinated biphenyls in foods
	Nitrite	Cereals (rice, flour, corn): 3mg/kg; vegetable: 4mg/kg; fish: 3mg/kg; meat: 3mg/kg; eggs: 5mg/kg; pickled vegetable: 20mg/kg; milk powder: 2mg/kg; salt (calculated on NaCl): 2mg/kg	1. Ion Chromatography (IC) Sample preparation →extraction and purification→separation→determination by Conductivity Detector (CD) 2. Spectrophotometry Sample preparation → extraction → purification → determination by spectrophotometer 3. Determination of nitrite and nitrate in dairy products Sample preparation (remove fat and protein) →nitrate reduction→colouration→determination by spectrophotometer	GB/T 5009.33-2010 National food safety standard determination of nitrite and nitrate in foods



	Rare earth	cereals - rice, corn, wheat: 2.0mg/kg; vegetable excluding spinach: 0.7mg/kg; fruit: 0.7mg/kg; peanut kernel: 0.5mg/kg; potato: 0.5mg/kg; mung bean: 1.0mg/kg; tea: 2.0mg/kg	Sample preparation → ashing → dissolution → centrifugal → standard solution preparation → determination by spectrophotometer	GB/T 5009.94-2003 Determination of rare earths in vegetable foods
	Aflatoxin B1	corn, peanut and its products: 20µg/kg; rice, vegetable oil (excluding corn oil & peanut oil): 10µg/kg; other cereals, legume, fermented food: 5µg/kg; infant formula: 5µg/kg	1. Thin-Layer Chromatography (TLC) Extraction → Concentration → Thin-Layer separation → determination by ultraviolet lamp 2. Competition Enzyme-Linked Immunosorbent Assay (C-ELISA) Extraction → defat → Concentration → Determination by enzyme-labeled instrument	GB/T 5009.22-2003 Determination of aflatoxin B1 in foods
	Aflatoxin M1	fresh milk: 0.5µg/kg; dairy products(calculated on fresh milk): 0.5µg/kg	Purification → Extraction → Concentration → Thin-Layer separation → Determination by ultraviolet lamp	GB/T 5009.24-2010 National food safety standard Determination of aflatoxin M1 and B1 in foods
	Deoxynivalenol (DON)	wheat: 1,000µg/kg; corn: 1,000µg/kg	1. Thin-Layer Chromatography (TLC) Extraction → Purification → Concentration → Thin-Layer separation → Determination by ultraviolet lamp 2. Enzyme-Linked Immunosorbent Assay (ELISA) Extraction → Purification → Concentration → Determination by enzyme-labeled instrument	GB/T 5009.111-2003 Determination of deoxynivalenol in cereal and cereal products
	Patulin	apple and hawthorn products: 50µg/kg	Extraction → Purification → Concentration → Thin-Layer separation → determination by thin layer chromatogram scanner	GB/T 5009.185-2003 Determination of patulin in apple and hawthorn products

## (1) Instant Noodles

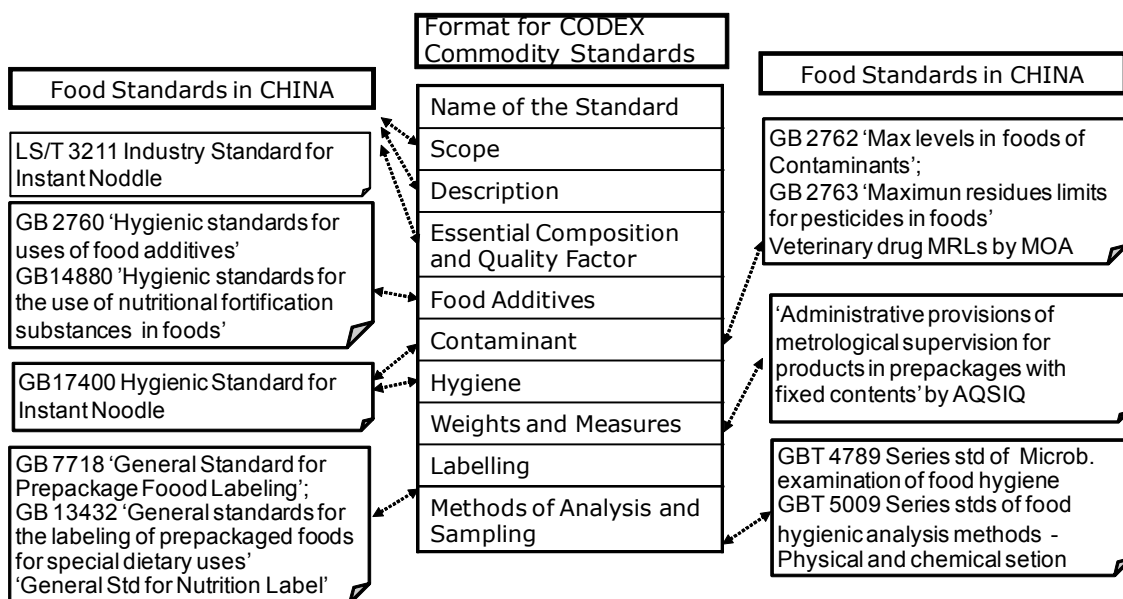


Figure 3.4-4 Codex Standards and GB standards (Commodity Standard)

Table 3.4-1 Case Study 1 Instant Noodle

	Hygienic Standard for Instant Noodle			Industry Standard for Instant Noodle			
<b>Std Code</b>	GB17400-2003			LS/T 3211-1995			
<b>Scope</b>	Fried and non-fried instant noodle.			Fried noodle, hot air dried noodle			
<b>Ingredients</b>	Should meet the requirement of relevant standards and regulation.			* Wheat flour should meet its national std * Fry oil should meet Hygiene std of edible oil frying process * Salt should meet its national standard			
<b>Sensory requir'nt</b>	* sould present its specific color; not burned or raw; could have shade of colour on both side. * Have normal smell; No moldy, rancid or other bad smell * Good in snape and pattern; Not foreign object or burned residue. * No broken, stuck after recovery with water; * No half-cooked and teeth-sticking texture.			* sould present its specific color; not burned or raw; could have shade of colour on both side. * No moldy, rancid or other strande smell and tast. * Good in shape and pattern; Not visible impurity. * No broken, stuck after recovery with water; * No half-cooked and teeth-sticking texture.			
<b>Technical Criteria</b>		≤	Fried	Non-fried	≤	Fried	Non-fried
	water (g/100g)		8	12	water, %	8	12
	Acid (Count as fat), KOH/mg/g		1.8		Acid (Count as fat) KOH/mg/g	1.8	
	Peroxide value (count as fat), g/100g		0.25		Peroxide value (count as fat), meq/100g	20	
	Carbonly value (count as fat) (meq/kg)		20		Fat, %	24	
	Pb, mg/kg		0.5		IoD Value	≥1.0	
	Total As, mg/kg		0.5		NaCl, %	2.5	
					Recovery time	4min	6min
				Weight variance	≤ 3% of declared weight		

	Hygienic Standard for Instant Noodle			Industry Standard for Instant Noodle			
	≤	Fried	Non-fried	≤	Fried	Non-fried	
<b>Microbe</b>	Tbc, cfu/g	1 000	50 000	Tbc, count/g	1000		
	Coliform group, MPN/100g	30	150	Coliform group, count/100g	30		
	Pathogen	Absent			Pathogen	Absent	
	<b>Food additive</b>	Meet relevant quality standards and regulation. Applying range and level meet GB2760 'Hygienic standard of food additive use'.			Food additives should meet national and industrial standards.		
<b>Packaging</b>	Packaging vessel and material should meet relevant hygiene standard and regulation			Should meet 'Hygienic standard of food packaging material'			
<b>Labeling</b>	Labeling should meet relevant regulation, and it is required to declare 'Fried' or 'Non-fried'			Should meet GB7718 'General labeling requirement for prepackaged food'			
<b>Test method</b>	Sensory requirement Technical criteria			Test method for each item			

<Methods of Analysis> Instant Noodle

Related legislation	Item	Specification	Analytical Methods	Reference
Hygienic Standard for Instant Noodle (GB 17400-2003)	moisture content	Not more than 8g/100g (Fried )	1) direct drying method 2) reduced pressure drying method 3) distillationmethod 4) karl-fischer method	GB 5009.3
		Not more than 12g/100g (Non-fried)		
	Acid value (Count as fat)	Not more than 1.8 KOH/mg/g (Fried )	1) extract fat by petroleum ether (GB/T5009.56) 2) Acid value: potassium hydroxide solution titration Peroxide value: a) potassium iodide solution titration b) ferric thiocyanate colorimetric method	GB/T5009.56 GB/T 5009.37
	Peroxide value (Count as fat)	Not more than 0.25 g/100g (Fried )	Carbonly value: dinitrophenylhydrazine colorimetric method	
	Carbonly value (count as fat)	Not more than 20 (meq/kg)		
Pb	Not more than 0.5 mg/kg	1. Graphite furnace atomic absorption spectrometry Sample preparation→ashing or digesting→standard solution preparation→determination by instrument. 2. Hydride Generation-atomic Fluorescence Spectrophotometry Sample preparation→digestion→standard solution preparation →determination 3. Flame Atomic Absorption Spectrometric analysis (FAAS) Sample preparation→extraction and separation→ determination by instrument 4. Double sulphur hydrazone colorimetry Sample preparation→digestion→standard solution preparation →determination by spectrophotometer 5. Single-sweep polarography Sample preparation→digestion→standard solution preparation →determination by polarographic analyze"	GB 5009.12	

	Total As	Not more than 0.5 mg/kg	<p>1. The determination of total arsenic</p> <p>1.1 Hydride Generation-atomic Fluorescence Spectrophotometry Wet digestion or dry ashing→standard solution preparation→determination by AFS</p> <p>1.2 Silver salt method Wet digestion or dry ashing→standard solution preparation→determination by spectrophotometer</p> <p>1.3 Method of Spot of arsenic Wet digestion or dry ashing→standard solution preparation→determination by arsenic apparatus</p> <p>1.4 Borohydride Reduction Colorimetric Method Wet digestion or dry ashing→standard solution preparation→determination by spectrophotometer</p> <p>2. The determination of abio-arsenic</p> <p>2.1 Hydride Generation-atomic Fluorescence Spectrophotometry The extraction of abio-arsenic→standard solution preparation→determination by AFS</p> <p>2.2 Silver salt method The extraction of abio-arsenic→standard solution preparation→determination by spectrophotometer"</p>	GB/T 5009.11
	Tbc	Not more than 1,000 cfu/g (Fried)	<p>Difference with FDA/BAM, Chapter 3: Aerobic plate count, 2001</p> <ul style="list-style-type: none"> <li>- Appropriate enumeration scope of plate counts computed change to 30 cfu ~ 300 cfu from 25 cfu ~ 250 cfu.</li> <li>- Incubate temperature change to 36 ± 1°C from 35 ± 1°C.</li> <li>- 10 times dilution, change to transferring 1ml of previous dilution to 9 ml of diluent from transferring 10ml of previous dilution to 90 ml</li> <li>- do not adopt the Spiral Plate Method"</li> </ul>	GB 4789.2
		Not more than 50,000 cfu/g (Non-fried)		
	Coliform group	Not more than 30 MPN/100g (Fried)	<p>Difference with FDA/BAM, Chapter 4: Enumeration of <i>Escherichia coli</i> and the coliform bacteria, 2002</p> <ul style="list-style-type: none"> <li>- Appropriate enumeration scope of plate counts computed change to 15 cfu ~ 150 cfu from 25 cfu ~ 250 cfu.</li> <li>- Incubate temperature change to 36 ± 1°C from 35 ± 1°C.</li> <li>- Sample size change to 25g (or 25ml) form 50g (or 50ml)"</li> </ul>	GB 4789.3
		Not more than 150 MPN/100g (Non-fried)		

	Pathogen	Negative	a) Enrichment with BPW/TTB/SC medium, and confirm through biochemical and serological characteristics. b) Enrichment with GE, HE/SS and EMB agar, and confirm through biochemical and serological characteristics. c) 1) Enrichment and identify with coloration and coagulase test 2) Baird-Parker plate count 3) Staphylococcus MPN count	GB 4789.4 GB 4789.10 GB/T 4789.5 GB/T4789.12
	Peroxide value (count as fat)	Not more than 20 meq/100g (Fried )	1) extract fat by petroleum ether (GB/T5009.56) 2) Acid value: potassium hydroxide solution titration Peroxide value: a) potassium iodide solution titration b) ferric thiocyanate colorimetric method Carbonly value: dinitrophenylhydrazine colorimetric method	GB/T5009.56 GB/T 5009.37
PRC Industry Standard for Instant Noddle (LS/T 3211-1995)	Fat	Not more than 24% (Fried )		GB/T 14772
	IoD Value	More than 1.0	Identified by indic colorific mensuration	GB 601 GB/T5009.56
	NaCl	Not more than 2.5%	Titration by standard solution of silver nitrate.	GB 601
	Recovery time	Not more than 4.0 min (Fried)	Place noodle in an insulation container with cover face; Add about five times weight boiling water as many as the noodle; Close the container and time-stamped. When using a piece of glass clamping softening noodles, observe gelatinization state without obvious hard heart, record the recovery time.	
		Not more than 6.0 min (Non-fried)		
	Weight variance	Not more than 3% of declared weight	Weight the packages Noddle three times by 0.5g sensitivity scales; Compared with the declared weight; Claculated deviation	
	Tbc	Not more than 1,000 count/g		GB 4789.2
	Coliform group	Not more than 30 count/100g		GB 4789.3

## (2) Carbonate Soft Drinks

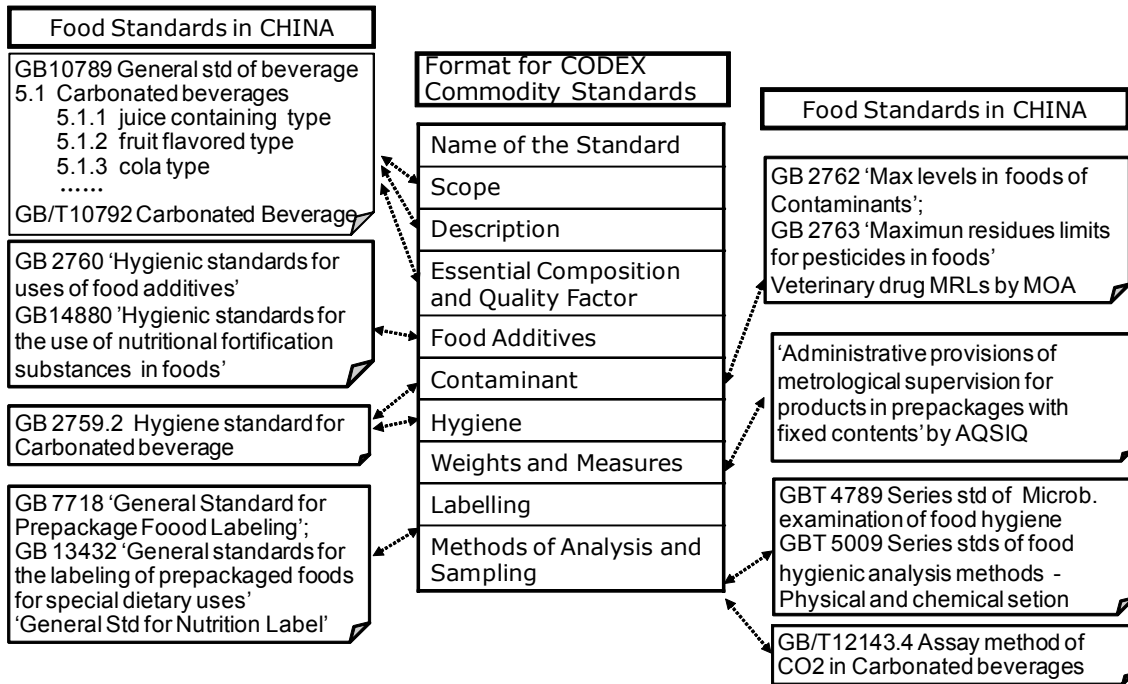


Figure 3.4-5 Summary of Food Standards in Carbonate Soft Drinks



Table 3.4-2 Case Study 2 Carbonated Soft Drinks

Name of the Standard	Carbonated Beverage (Sparkling beverage)	Hygiene Standard of Carbonated Beverage
Scope	Classification; tech requirements; Assay method; Test rules; Labeling; packaging & transport	Limited level; Food additives; Process Hygiene requirement; Packaging; labeling; Storage & transport; test
Description	Beverage charged with external CO <sub>2</sub> , excluding CO <sub>2</sub> generated from fermentation .	Beverage charged with external CO <sub>2</sub> , excluding CO <sub>2</sub> generated from fermentation .
Essential Composition and Quality Factor	<ul style="list-style-type: none"> <li>● CO<sub>2</sub> content ≥ 1.5</li> <li>● Juice type: juice content ≥ 2.5%</li> </ul>	<ul style="list-style-type: none"> <li>● Should present the color and taste of main ingredients; without strange taste, bad smell and foreign object.</li> <li>● Pb ≤ 0.3mg/L, As ≤ 0.3mg/L, Cu ≤ 5mg/L</li> </ul>
Food Additives	<ul style="list-style-type: none"> <li>● GB2760 and GB14880</li> </ul>	<ul style="list-style-type: none"> <li>● GB2760 for Range and level requirement</li> <li>● Also meet relative quality standard and regul'n</li> </ul>
Contaminant		<ul style="list-style-type: none"> <li>● GB 2762</li> </ul>
Hygiene		<ul style="list-style-type: none"> <li>● Microbe: Tbc ≤ 100 cfu/100ml, Coliform group ≤ 6 MPN/100ml, Mold count ≤ 10 cfu/100ml, Yeast ≤ 10 cfu/100ml, Pathogen (salmonella, Shigella, Staphylococcus aureus): Absent.</li> <li>● GB12695 Beverage factory GMP Practice</li> </ul>
Weight/Measure		
Labelling	<ul style="list-style-type: none"> <li>● GB7718 and GB13432.</li> <li>● Juice type should declare juice content.</li> </ul>	
Methods of Analysis	<ul style="list-style-type: none"> <li>● CO<sub>2</sub> content test:                             <ol style="list-style-type: none"> <li>1) Reductor method;</li> <li>2) Distilling titration</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>● Pb: To be tested as GB/T 5009.12</li> <li>● Total As: To be tested as GB/T 5009.11</li> <li>● Cu: To be tested as GB/T 5009.13</li> <li>● Micorbe: To be tested as GB/T 4789.21</li> </ul>

<Methods of Analysis> Carbonated Soft Drinks

Related legislation	Item	Specification	Analytical Methods	Reference
Carbonated Beverages (GB10792)	CO <sub>2</sub> volume	≥ 1.5	1) Reductor method; 2) Treated with acid, caustic, and then distillation, absorb CO <sub>2</sub> with NaOH. Add BaCl then titrate with HCl.	Assay method of CO <sub>2</sub> in Carbonated beverages (GB/T 12143.4)
	Juice content	≥ 2.5%	NA	Only for Carbonated Beverages with Juice added
	Sensory evaluation	Should present the colour and taste of main ingredients; without strange taste, bad smell and foreign object.	Visually check	
	Lead	≤ 0.3 mg/L	1) Wet degradation methodour Dry incineration method 2) Atomic absorption spectrophotometry 3) Polarographic analysis 4) Dithizone colourimetry method	National food safety standard -- Determin of lead in food (GB5009.12)
	Total Arsenic	≤ 0.2 mg/L (as of Arsenic)	1) Wet degradation methodour Dry incineration method 2) Gutzeit methodour Silver diethyldithiocarbamate method 3) Arsenic Stain Measurement method 4) Deox" idiza"tion and colourimetry method	Determination of total arsenic and abio-arsenic in foods (GB5009.11)
	Coper	≤ 5 mg/L	1) Atomic absorption spectrophotometry 2) Sodium diethyldithiocarbamate method	Determination of copper in foods (GB5009.13)
	Total plate count	≤ 100 cfu/ml	Cultured with PCA culture medium and count	National food safety standard -- Food microbiological examination : Aerobic plate count (GB4789.2)
	Coliform	≤ 6 MPN/100ml	1) Coliforms MPN count 2) Coliforms plate count	National food safety standard --Food microbiological examination: Enumeration of coliforms (GB4789.3)

Mold	$\leq 10$ cfu/ml	Cultured with Rose Bengal Medium and count	National food safety standard Food microbiological examination: Enumeration of moulds and yeasts (GB4789.15)
Yeast	$\leq 10$ cfu/ml	Cultured with Rose Bengal Medium and count	National food safety standard Food microbiological examination: Enumeration of moulds and yeasts (GB4789.15)
Pathogen (salmonella)	Negative	Enrichment with BPW/TTB/SC medium, and confirm through biochemical and serological characteristics.	National food safety standard Food microbiological examination: Salmonella (GB4789.4)
Pathogen (Shigella)	Negative	Enrichment with GE, HE/SS and EMB agar, and confirm through biochemical and serological characteristics.	Microbiological examination of food hygiene--Examination of Shigella (GB4789.5)
Pathogen ( <i>Staphylococcus aureus</i> )	Negative	1) Enrichment and identify with colouration and coagulase test 2) Baird-Parker plate count 3) Staphylococcus MPN count	National food safety standard Food microbiological examination: <i>Staphylococcus aureus</i> (GB4789.10)

### (3) Prepared Frozen Foods

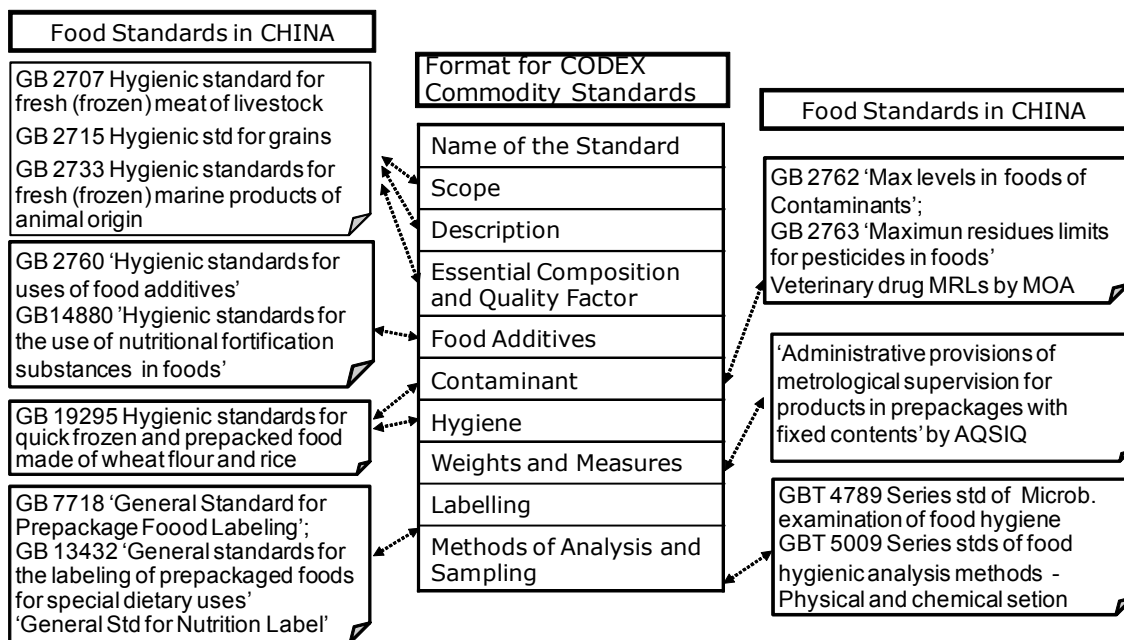


Figure 3.4-6 Summary of Food Standards in Prepared Frozen Foods



Table 3.4-3 Case Study 3 Prepared Frozen Foods

Name of Standard	Contaminant and Physical/Chemical Index ( $\leq$ )										
	Pb mg/kg	Cd mg/kg	Al mg/kg	Me Hg mg/kg	Tot. Hg mg/kg	Inor. As mg/kg	Tot. As mg/kg	Acid value KOH,mg/g	Perox. Val g/100g	volatile basic N mg/100g	Aflatoxin $\mu$ g/kg
GB19295 Hygienic std for quick-frozen and pre-packed food made of wheat & rice	0.5	--	--	--	--	--	0.5	3	0.15	15	5
GB 2715 Hygienic standards for grains	0.2	0.2 (rice/bean) 0.1 (wheat/corn /other)	--	--	0.02	0.15 (rice) 0.1(wheat) 0.2(other)	--	--	--	--	20(Corn) 10(Rice) 5(Other)
GB 2733 Hygienic std for fresh(frozen) marine products of animal origin	0.5 (Fish)	0.1 (Fish)	--	1.0 (Carnivore fish) 0.5(other)	--	0.1(fish) 0.5(other)	--	--	--	10--30	--
GB 2707 Hygienic standards for fresh(frozen) meat of livestock	0.2	0.1	--	--	0.05	0.05	--	--	--	15	--
GB16869 Fresh and frozen poultry product	0.2	0.5	--	--	0.05	--	--	--	--	15	--
DB11/615 Hygienic requirement of quick-frozen meat products	0.2	0.1	--	--	0.05	0.05	--	--	--	10	--
NYT1407 Green food-quick-frozen and pre-packed food made of wheat flour or rice	0.2	0.2	25	0.5 (含肉)	0.05 (含肉) 0.02 (无肉)	0.05	--	3(含馅)	0.15(含馅)	15(含肉)	5

Name of Standard	Microbiological Index(≤)							Storage temperature
	Tot. plate count (fresh) cfu/g	Tot. plate count (cooked) cfu/g	Colif.(fresh) MPN/100g	Colif. (cooked) MPN/100g	Mold count (fresh)	Mold count (cooked)	Microbe Pathogen	
GB19295 Hygienic std for quick-frozen and pre-packed food made of wheat & rice	3000000	100000	--	230	-	50	Not detected	-18℃±2℃
GB 2715 Hygienic standards for grains	--	--	--	--	--	--	--	--
GB 2733 Hygienic std for fresh(frozen) marine products of animal origin	--	--	--	--	--	--	--	-15℃ to -18℃
GB 2707 Hygienic standards for fresh(frozen) meat of livestock	--	--	--	--	--	--	--	--
GB16869 Fresh and frozen poultry product	1000000	500000 (Frozen)	10000	5000 (Frozen)	--	--	0/25g (Salmonella) 0/25g (O157:H7)	-18℃±1℃
DB11/615 Hygienic requirement of quick-frozen meat products	500000(Total plate count)		5000(Coliform group)		--	--	Not detected	-18℃±2℃
NYT1407 Green food-quick-frozen and pre-packed food made of wheat flour or rice	3000000	100000	--	230	--	50	Not detected	-18℃±2℃

<Methods of Analysis> Prepared Frozen Foods

Related legislation	Item	Specification	Analytical Methods	Reference
GB 19295 <Hygienic standard for quick-frozen and pre-packed food made of wheat flour and rice>	Lead	0.5mg/kg	Dry incineration method→Atomic absorption spectrophotometry	GB 5009.12
	Total arsenic	0.5mg/kg	Dry incineration method→Hydriding→Atomic fluophotometer	GBT 5009.11
	Acid value	3mg/g	Acid value measurement method by titration	GBT 5530
	Peroxide value (for fat)	0.15g/100g	Peroxide value measurement method by titration	GBT 5538
	Total volatile basic nitrogen	15mg/100g	Titration with hydrochloric acid	SCT 3032
	Aflatoxin B1	5µg/kg	Thin-layer chromatography	GBT 5009.22
	Aerobic plate count	3,000,000 cfu/g (raw) 100,000 cfu/g (heated before freezing)	Standard agar medium 36±1.0°C, 48±2h	GBT 4789.2
	Coliform	230MPN/100g (heated before freezing)	Coliform MPN count method: LST broth fermentation tube→gas generation→BGLB broth fermentation	GB 4789.3
	Salmonella	Negative	Agar plate count→serology test	GB 4789.4
	Shigella	Negative	Biochemical test→serology test	GBT 4789.5
	<i>Staphylococcus aureus</i>	Negative	Biochemical test→plasma-coagulase test	GB 4789.10
Mold	≤50 cfu/g (heated before freezing)	Microscopic examination count method	GB 4789.15	
GB 16869<Fresh and frozen poultry product>	Mercury	0.05mg/kg	Dry incineration method→Atomic fluophotometer	
GB 2733<Hygienic standard for fresh and frozen marine products from animal origin>	Cadmium (for fish)	0.1mg/kg	Dry incineration method→Atomic absorption spectrophotometry	GBT 5009.15



### 3.5 Southeast Asia (Malaysia, Singapore, Philippines, Indonesia, Thailand, Vietnam)

#### 3.5.1 Malaysia

##### 3.5.1.1 Food Administration

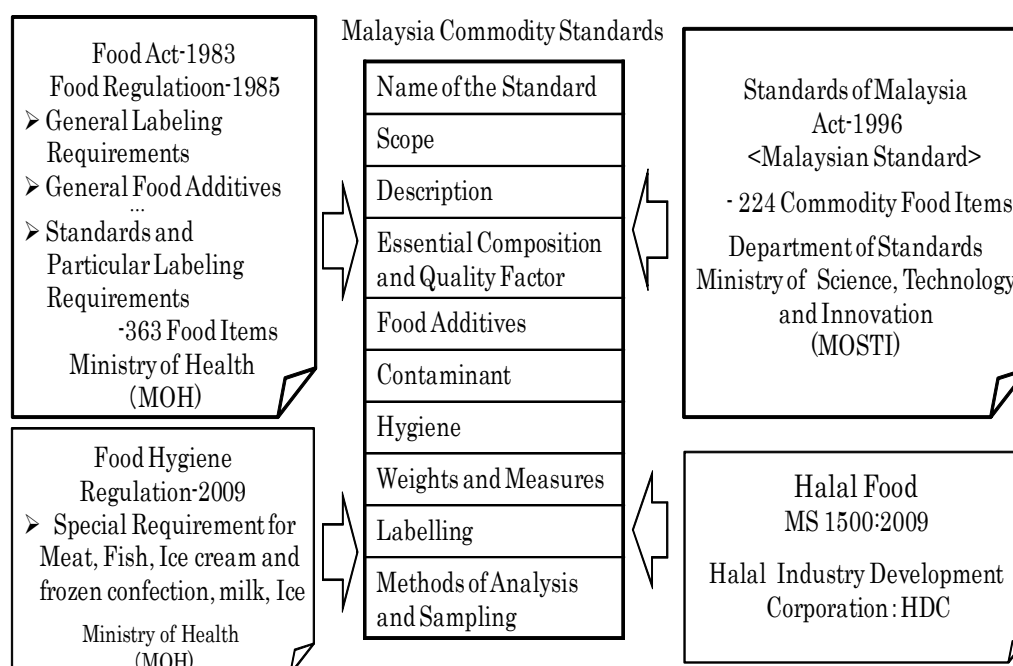
Main administrative bodies responsible for food safety and hygiene control in Malaysia are Ministry of Agriculture and Agro-Based Industry and Ministry of Health. Their main roles are shown in **Table 3.5-1**.

**Table 3.5-1 Food Safety Control System in Malaysia**

	Safety and hygiene control for production and primary processing	Safety and hygiene control for processed foods
	Ministry of Agriculture and Agro-Based Industry (MOA)	Ministry of Health (MOH)
Agricultural products	Department of Agriculture (DOA)	Food Safety and Quality Division (FSQD)
Marine Products	Fisheries Department (DOF)	
Livestock products	Department of Veterinary services (DVS)	

##### 3.5.1.2 Acts and Regulations related to Commodity Standards

Major acts and regulations related to Commodity Standards are presented in **Figure 3.5-1**.



**Figure 3.5-1 Malaysian Commodity Standards and Relevant Laws**

### **3.5.1.3 Food Act (jurisdiction : MOH)**

#### **(1) Food Act- 1983<sup>1</sup>**

The Food Act is a key law in food administration. It was enforced to protect the public against health hazards and fraud in the preparation, sale and use of foods. The Act stipulates permissible range in the preparation, sale and use of foods. It gives legal authority to relevant agencies to carry out their duties in implementing the Act. Such legal authority includes the power of the Minister of Health to stipulate the supplementary provisions compiled as Food Regulations-1985.

#### **(2) Food Regulations-1985<sup>2</sup>**

Supplementary provisions are compiled in Food Regulation-1985. Food Regulation-1985 is continuously updated on amendment and newly setting of regulations. Food Regulation-1985 provides requirements for labeling, food additives and supplement, packaging, contaminants, bacterial toxin etc., and Standards and Particular Labeling Requirements for 363 food items (FY2009 Report Table 3.5-2). It stipulated minimum definition, component standard and special labeling requirements.

#### **(3) Food Hygiene Regulations-2009**

Food Hygiene Regulation-2009<sup>3</sup> regulates hygienic requirements against those who handle foods, as well as the conduct and maintenance of food premises. A food premise is defined in the Regulation as a place "used for or in connection with the preparation, preservation, packaging, storage, conveyance, distribution or sale of any food, or the relabeling, reprocessing or reconditioning of any food". The Regulation sets Special Requirements for Meat, Fish, Ice cream, and Frozen confection, Milk, and Ice in handling, preparation, packaging, supply, storage and sale. For vending machine, same special regulation is stipulated.

### **3.5.1.4 Malaysian Standards**

As commodity standards, Malaysian Standards (MS) stipulated by Ministry of Science, Technology and Innovation (MOSTI) occupies important place in food regulations.

They are national standards for all industries pursuant to ISO, but are

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<sup>1</sup> <http://fsis2.moh.gov.my/fosimv2/HOM/frmHOMFARSec.aspx?id=22>

<sup>2</sup> <http://fsis2.moh.gov.my/fosimv2/HOM/frmHOMFARSec.aspx?id=21>

<sup>3</sup> [http://fsq.moh.gov.my/uploads/Food\\_Hygiene\\_Regulations\\_2009.pdf](http://fsq.moh.gov.my/uploads/Food_Hygiene_Regulations_2009.pdf)

basically voluntary standards.

Malaysian Standards shown in FY2009 Report Table 3.5-3 are in the same format for the Codex Commodity Standards.

Approximately 6,000 Malaysian Standards are issued. As of March, 2010, there are 454 Malaysian Standards issued in International Classification of Standards (ICS) code 67 (Food technology). Of them, 224 Malaysian Standards are related to Specifications (FY2009 Report Table 3.5-4). These are basically voluntary standards and a certified mark can be labeled by obtaining official certification.

Recently, standardization of Malaysian Standards for agricultural products including fresh vegetables and fruits are proceeding as a national policy. As of end of February 2010, 30 items (FY2009 Report Table 3.5-4) are registered as mandatory standards referred by administrative authority.

#### **3.5.1.5 Halal System**

Halal System is a system to examine raw materials of food, production process, quality of products permissible under Islamic Law, and to certify and label halal-compliant products. Halal Development Company (HDC) is responsible for examination of standards and promotion of halal industry. MS standards and MS 1500:2009 are established as main standards. It is said that any food without halal mark can not be distributed in Malaysian market. Therefore, we should give due consideration to Halal system.

The Malaysian government recently announced its intentions of enacting a Halal Act, and it will be positioned as the dominant conception of current Halal system. While it is still unclear as to what kind of provisions would be found within the Act, it should likely have a significant impact on the production, distribution, sales and so on.

#### **3.5.1.6 Methods of Analysis for General Foods**

Methods of analysis for "General Foods" are shown in **Table 3.5-A1**. Methods of analysis for the food categories taken up in the Case Study are described in the charts under the tables for the standards for those food categories (**Tables 3.5-5, 3.5-6 and 3.5-7**), respectively.

#### **3.5.1.7 Case Study**

##### **(1) Instant Noodles**

Instant noodles are defined as "Pasta" including noodles, beehoon, laksa, macaroni and spaghetti in Food Regulations-1985.

Instant Wheat Noodle (MS 526:2009) in MS is a standard which complied

with Instant Noodles developed by Codex. In **Table 3.5-5**, Instant Noodles is also compared with Instant Beehoon (MS1112: 1988).

## **(2) Carbonated Soft Drinks**

There are not any standards in Food Regulations-1985 and MS like those only for carbonated soft drink in Japan. Both of them cover variety of food items like common soft drinks (**Table 3.5-6**).

## **(3) Prepared Frozen Foods**

While there are some standards for frozen confection, frozen meats and frozen vegetables, no standards for prepared frozen foods more like Japanese ones. There are not any appropriate standards in MS, however, relatively similar standards are presented in **Table 3.5-7**.

**Table 3.5-A1 Methods of Analysis for General Foods**

Related legislation	Item	Specification	Analytical Methods	Reference
Food Regulations 1985	Incidental constituent	No person shall import prepare or advertise for sale or sell any food containing incidental constituent, except as otherwise specified in regulations 38, 38A, 39, 40 and 41	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Metal contaminant	<ol style="list-style-type: none"> <li>1. No person shall import prepare or advertise for sale or sell any food, specified in column (1) of Table I to the Fourteenth Schedule which contains the substances set out in the headings to columns (2) to (9) of the said Table in a proportion greater than the maximum permitted proportion specified opposite that food in the columns thereof applicable to the substances.</li> <li>2. No person shall import, prepare or advertise for sale or sell the food additives specified in column (1) of Table II to the Fourteenth Schedule which contains the substances set out in the headings to column (2) to (8) of the said Table in a proportion greater than the maximum permitted proportion specified opposite that food additive in the columns thereof applicable to the substance.</li> </ol>	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	3-MCPD	No person shall import prepare or advertise for sale or sell any food, specified in column (1) of Table I to the Fourteenth A Schedule which contains 3-monochloropropane-1,2-diol (3-MCPD) in a proportion greater than the maximum permitted proportion specified opposite that food in column (2) of the Schedule.		
	Microorganisms and their toxins	<ol style="list-style-type: none"> <li>1. No person shall import, prepare or advertise for sale or sell any food ready for consumption that is contaminated with pathogenic microorganisms;</li> <li>2. No person shall import, prepare or advertise for sale or sell any food, excluding water, specified in column (1) of Table I to the Fifteenth Schedule which contains bacteria in numbers greater than the numbers specified opposite that food in columns (2), (3) and (4) of the said Table for total plate, coliform and Escherichia coli count respectively.</li> <li>3. No person shall import, prepare or advertise for sale or sell any food which contains the mycological contaminant specified in column (1) of Table II to the Fifteenth Schedule in proportion greater than the proportion specified opposite thereto in column (2) of the said Table.</li> </ol>		

	Drug residue	<ol style="list-style-type: none"> <li>1. No person shall import, sell, expose or offer for sale or delivery, any food intended for human consumption which contains drug residues greater than the amount set out in Table I, to the Fifteenth A Schedule.</li> <li>2. Notwithstanding subregulation (1), either chlorotetracycline or oxytetracycline may be incorporated in ice used for preserving fresh fish, and unpeeled shrimps, provided that the concentration of one of these drugs shall not exceed 5 parts per million in the product.</li> <li>3. Notwithstanding subregulation (1) and (2), no person shall import, sell, expose for sale or delivery, any food intended for human consumption which contains the drugs as set out in Table II to the Fifteenth A Schedule.</li> </ol>		
	Pesticide residue	<p>No person shall import, prepare for sale or sell any food:</p> <ol style="list-style-type: none"> <li>a) containing pesticide residue in a proportion greater than the proportion specified for that food in relation to that pesticide residue as set out in the Sixteenth Schedule;</li> <li>b) containing pesticide residue in a proportion greater than the proportion specified for that food in relation to that pesticide residue as recommended in the Codex Alimentarius, where the pesticide is not specified in the Sixteenth Schedule; or</li> <li>c) containing more than 0.01 milligram per kilogram of any pesticide residue, where the pesticide residue is not specified for that food in the Sixteenth Schedule or Codex Alimentarius</li> </ol>		

**Table 3.5-5 Case Study 1 Instant Noodles**

<b>Standard Item</b>	<b>Food Regulations 1985 (as at 1<sup>st</sup> September 2009)</b>	<b>MS 526:2009</b>	<b>MS 1112:1988</b>
Name of the Standard	Pasta	Instant Wheat Noodles	Instant Beehoon
Scope	<ul style="list-style-type: none"> <li>▪ Noodles, beehoon, laksa, macaroni and spaghetti</li> </ul>	<ul style="list-style-type: none"> <li>▪ Fried noodles, non-fried noodles</li> </ul>	<ul style="list-style-type: none"> <li>▪ Instant beehoon (Instant rice vermicelli)</li> </ul>
Description	<ul style="list-style-type: none"> <li>▪ Any product that is obtained by extruding or moulding units of dough.</li> </ul>	<ul style="list-style-type: none"> <li>▪ A product prepared from wheat as the main ingredient and other flour/starches, with or without the addition of other ingredients and packed with suitable packaging material. It may be treated by alkaline agents. It is characterised by the use of pregelatinisation process and dehydration either by frying or by other methods.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Made up principally of rice flour and other wholesome food with or without the incorporation of seasoning.</li> </ul>
Essential Composition and Quality Factor	<ul style="list-style-type: none"> <li>▪ Principally of a cereal meal</li> <li>▪ May contain carbohydrate foods, egg solids, salt and any other food</li> </ul>	<ul style="list-style-type: none"> <li>▪ Free from dirt, foreign matter and insects.</li> <li>▪ Acceptable in term of appearance, texture, aroma, taste and colour and be free from any undesirable off-flavours and odours.</li> <li>▪ To qualify for the concept of 'instant', the noodle shall be cooked or soaked in not more than four minutes in boiling water.</li> <li>▪ Essential ingredients are:                             <ul style="list-style-type: none"> <li>a) wheat flour and other flour or starches;</li> <li>b) water; and</li> <li>c) common salts or alkaline salts. The permitted alkaline salts are sodium, potassium, or calcium salt of carbonates, phosphates and/or hydroxides.</li> </ul> </li> <li>▪ Moisture: 10% (fried) , 14% (non-fried)</li> <li>▪ Cooking or soaking time: 4 minutes (fried and non-fried)</li> <li>▪ Protein content: 8.5% (fried and non-fried)</li> <li>▪ Acid value: 2.0 mg KOH/g (fried), Not applicable (non-fried)</li> </ul>	<ul style="list-style-type: none"> <li>▪ In the form of solid strands and shall be free from mould, off-flavour, insect infestation or other spoilage.</li> <li>▪ To qualify for the concept of 'instant', the product must be cooked in not more than four minutes in boiling water.</li> <li>▪ Moisture: 12%</li> <li>▪ Cooking time: 4 minutes</li> <li>▪ Total protein: 5.7%</li> <li>▪ Total ash: 1.0%</li> </ul>
Food Additives	<ul style="list-style-type: none"> <li>▪ Permitted colouring substance</li> <li>▪ Transglutaminase, sulphur dioxide or sulphites (as</li> </ul>	<ul style="list-style-type: none"> <li>▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985.</li> </ul>	<ul style="list-style-type: none"> <li>▪ May contain food additives but not contain any added preservatives.</li> </ul>

	<p>permitted food conditioner): &lt;200mg/kg</p> <ul style="list-style-type: none"> <li>Subject to general requirements concerning food additives.</li> </ul>		
Contaminant	<ul style="list-style-type: none"> <li>Arsenic (As): &lt;1mg/kg</li> <li>Lead (Pb) : &lt;2 mg/kg</li> <li>Tin (Sn): &lt;40 mg/kg</li> <li>Mercury (Hg): &lt;0.05 mg/kg</li> <li>Cadmium (Cd): &lt;1 mg/kg</li> <li>Antimony (Sb): &lt; 1mg/kg</li> <li>3-monochloropropane-1,2-diol (3-MCPD) for all foods containing acid hydrolysed protein (solid foods): 0.05 mg/kg</li> </ul>	<ul style="list-style-type: none"> <li>In accordance with Malaysian Food Act 1983 and Food Regulations 1985.</li> </ul>	<ul style="list-style-type: none"> <li>In accordance with Malaysian Food Act 1983 and Food Regulations 1985.</li> </ul>
Hygiene	<ul style="list-style-type: none"> <li>Harmful, damaged packages prohibited</li> <li>No pathogenic microorganisms</li> <li>Aflatoxin or any other mycotoxins: &lt;5 µg/kg</li> <li>Food Hygiene Regulations 2009</li> </ul>	<ul style="list-style-type: none"> <li>Packed in suitable packaging materials which will safeguard the hygienic, nutritional, technological and organoleptic qualities of the product.</li> <li>Packaging materials shall be made of substances which are safe and suitable for their intended use. They should not impart any toxic substances or undesirable odour or flavour.</li> <li>Processed and packed under hygienic conditions in premises licensed in accordance with MS1514 – Good Manufacturing Practices.</li> </ul>	<ul style="list-style-type: none"> <li>Processed and packed under hygienic conditions.</li> </ul>
Weight and Measures	<ul style="list-style-type: none"> <li>Not specified</li> </ul>	<ul style="list-style-type: none"> <li>Not specified</li> </ul>	<ul style="list-style-type: none"> <li>Not specified</li> </ul>
Labelling	<ul style="list-style-type: none"> <li>If labelled with the word “egg” or any word of similar meaning: &gt;4% egg solids calculated on water-free basis</li> <li>Subject to general requirements for labelling</li> <li>Nutrition labelling is mandatory (regulation 18B)</li> </ul>	<ul style="list-style-type: none"> <li>The following information shall appear clearly on each package: <ul style="list-style-type: none"> <li>a) name of product;</li> <li>b) name and address of the manufacturer and/or distributor or trade mark owner;</li> <li>c) net weight (in grams);</li> <li>d) list of ingredients and additives;</li> <li>e) date of manufacture or manufacturer’s code;</li> <li>f) date of expiry; and</li> <li>g) method of preparation.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>The following information shall appear clearly on each package: <ul style="list-style-type: none"> <li>a) name of product;</li> <li>b) list of ingredients and added additives;</li> <li>c) name of manufacturer and/or supplier;</li> <li>d) guaranteed net weight in grams;</li> </ul> </li> </ul>



	of the Food Regulations 1985)	<ul style="list-style-type: none"> <li>▪ Shall comply with requirements specified in the Malaysian Food Act 1983 and Food Regulations 1985.</li> </ul>	<ul style="list-style-type: none"> <li>e) date of manufacture or manufacturer's code;</li> <li>▪ Shall comply with requirements specified in the Malaysian Food Act 1983 and Food Regulations 1985.</li> </ul>
Methods of Analysis and Sampling	<ul style="list-style-type: none"> <li>▪ Additives, contaminants, microorganisms, mycotoxins</li> </ul>	<ul style="list-style-type: none"> <li>▪ Moisture: oven-drying method</li> <li>▪ Protein content: Kjeldahl method</li> <li>▪ Acid value: Titrimetric method</li> <li>▪ Cooking time</li> </ul>	<ul style="list-style-type: none"> <li>▪ Moisture: oven-drying method</li> <li>▪ Protein content: Kjeldahl method</li> <li>▪ Ash content: Direct method</li> <li>▪ Cooking time</li> </ul>

### <Methods of Analysis> Instant Noodles

Related legislation	Item	Specification	Analytical Methods	Reference
Food Regulations 1985	Food additives	Permitted colouring substance; transglutaminase: <200 mg/kg; sulphur dioxide: <200 mg/kg; sulphites: <200 mg/kg	International standards (AOAC, ISO, APHA, etc.)	
MS 526:2009 - Instant Noodles - Specification (Second Edition)	Moisture content	10% (Fried); 14% (Non-fried)	MS 526:2009, Appendix A	
	Cooking/soaking time	4 minutes	MS 526:2009, Appendix B	
	Protein content	8.50%	MS 526:2009, Appendix C	
	Acid value	2.0 mg KOH/g (Fried only)	MS 526:2009, Appendix D	
MS 1112:1988 - Instant Beehoon (Instant Rice Vermicelli) - Specification	Moisture content	12%	MS 1112:1988, Appendix A	
	Cooking/soaking time	4 minutes	MS 1112:1988, Appendix B	
	Protein content	5.70%	MS 1112:1988, Appendix C	
	Ash content	1.00%	MS 1112:1988, Appendix D	

**Table 3.5-6 Case Study 2 Carbonated Soft Drinks**

<b>Standard Item</b>	<b>Food Regulations 1985 (as at 1<sup>st</sup> September 2009)</b>	<b>MS 601:1994</b>
Name of the Standard	Flavoured drink	Ready-to-drink beverages (carbonated and non-carbonated)
Scope	<ul style="list-style-type: none"> <li>▪ Flavoured drink</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ready-to-drink beverages including fruit drinks and flavoured drinks</li> </ul>
Description	<ul style="list-style-type: none"> <li>▪ Flavoured drink shall be the soft drink composed of potable water and permitted flavouring substances, with or without sugar, glucose, high fructose glucose syrup or edible portions of extract of fruit or other plant substance. It may contain carbon dioxide.</li> </ul>	<ul style="list-style-type: none"> <li>▪ A non-alcoholic beverage and is saturated with carbon dioxide. It is prepared from comminuted fruit or fruit juices or concentrates and/or fruit or plant extracts, permitted sweeteners, potable water with or without the addition of the following ingredients:                             <ul style="list-style-type: none"> <li>a) acidity regulators;</li> <li>b) permitted food conditioners;</li> <li>c) permitted flavouring substance;</li> <li>d) permitted preservatives;</li> <li>e) permitted colouring substance;</li> <li>f) permitted nutrient supplement like vitamin C;</li> <li>g) salts.</li> </ul> </li> </ul>
Essential Composition and Quality Factor	<ul style="list-style-type: none"> <li>▪ Not specified</li> </ul>	<ul style="list-style-type: none"> <li>▪ Free from insect, rodent contamination and foreign particles as well as visibly free from seeds and skins.</li> <li>▪ Have the flavour and aroma characteristic of the fruits, vegetables or flavours for which it is claimed or implied. Foreign flavours and odours shall not be present.</li> <li>▪ Carbon dioxide – industrial grade free from hydrogen sulphide, sulphur dioxide and other noxious gases, mineral oils and also free from foreign odour.</li> <li>▪ Flavouring agents: Comminuted fruit and fruit juices or concentrates – Extracted from natural and properly washed fruits and fit for consumption. They may either be freshly prepared or concentrated and preserved either by pasteurization or addition of permitted chemical preservatives. Essential oils and fruit/plant extracts – Essential oils and fruit/vegetable extracts are compounds obtained from fruit or plants and shall be safe for human consumption.</li> <li>▪ Flavouring substances – Substance either naturally present in fruit/plant or added capable of imparting flavour to the product and shall be safe for consumption.</li> </ul>
Food Additives	<ul style="list-style-type: none"> <li>▪ May contain permitted preservative, permitted colouring substances and permitted food</li> </ul>	<ul style="list-style-type: none"> <li>▪ Acid regulators - The following acids and the sodium, potassium, calcium salt of the acids may be used:</li> </ul>

	<p>conditioner including:  ester gum &lt;150 mg/litre; and  β-cyclodextrin &lt;500 mg/litre</p> <ul style="list-style-type: none"> <li>▪ May contain caffeine-containing plant extract as permitted flavouring substance: &lt; 200 mg/litre</li> <li>▪ Preservative:  Sulphur dioxide: &lt;140 mg/kg  Benzoic acid: &lt;350 mg/kg  Sorbic acid: &lt;350 mg/kg</li> <li>▪ Flavouring substance:  Agaric acid: &lt;20 mg/kg  Total hydrocyanic acid: &lt;1 mg/kg  Pulegone: &lt;1 mg/kg  Quassin: &lt;5 mg/kg  Quinine: &lt;85 mg/kg  Thujones: &lt;0.5 mg/kg</li> <li>▪ Subject to general requirements concerning food additives.</li> </ul>	<ul style="list-style-type: none"> <li>a) citric acid;</li> <li>b) phosphoric acid;</li> <li>c) lactic acid;</li> <li>d) malic acid;</li> <li>e) acetic acid;</li> <li>f) fumaric acid;</li> <li>g) tartaric acid.</li> <li>▪ Food colours, nutritive and non-nutritive sweeteners as per Food Regulations.</li> <li>▪ Mineral salts – sodium carbonate and sodium bicarbonate</li> <li>▪ Preservatives:  Sulphuric dioxide: &lt;140 ppm  Benzoic acid: &lt;350 ppm  Sorbic acid: &lt;350 ppm</li> <li>▪ Flavouring agents (if used):  Caffeine: &lt;150 ppm  Quinine: 40-85 ppm  Vitamin C (ascorbic acid): 10 mg/100ml</li> </ul>
Contaminant	<ul style="list-style-type: none"> <li>▪ Arsenic (As): &lt;0.1mg/kg</li> <li>▪ Lead (Pb) : &lt;0.2 mg/kg</li> <li>▪ Tin (Sn): &lt;40 mg/kg (&lt;250 mg/kg if packed in can)</li> <li>▪ Mercury (Hg): &lt;0.05 mg/kg</li> <li>▪ Cadmium (Cd): &lt;1 mg/kg</li> <li>▪ Antimony (Sb): &lt; 0.15 mg/kg</li> </ul>	<ul style="list-style-type: none"> <li>▪ Metal contaminants:  Copper: &lt;1.0 ppm  Arsenic: &lt;0.02 ppm  Lead: &lt;0.2 ppm</li> </ul>
Hygiene	<ul style="list-style-type: none"> <li>▪ Harmful, damaged packages prohibited</li> <li>▪ Any glass bottle that has previously been used for another food</li> <li>▪ No pathogenic microorganisms</li> <li>▪ Aflatoxin or any other mycotoxins: &lt;5 µg/kg</li> <li>▪ Food Hygiene Regulations 2009</li> </ul>	<ul style="list-style-type: none"> <li>▪ Total colony count: &lt;50 per ml</li> <li>▪ Viable yeast and moulds: &lt;10 per ml</li> <li>▪ Presumptive coliform organism: negative</li> <li>▪ Shall be prepared under strict hygienic conditions in accordance with Good Manufacturing Practices and relevant public health requirements currently enforced.</li> </ul>
Weight and Measures	<ul style="list-style-type: none"> <li>▪ Not specified</li> </ul>	<ul style="list-style-type: none"> <li>▪ Not specified</li> </ul>
Labelling	<ul style="list-style-type: none"> <li>▪ For the purpose of these Regulations, the word “beer”, “lager”, “champagne” or “wine” or other words suggesting that the product is an alcoholic beverage shall not appear on the label of any soft drink other than ginger beer, ginger</li> </ul>	<ul style="list-style-type: none"> <li>▪ Each container shall be suitably labelled with the following information:  a) name and trade-mark of the product;  b) name and address of the manufacturer and/or packer;  c) guaranteed net volume in ml;  d) list of ingredients in descending order of proportions;</li> </ul>

	<p>ale and root beer.</p> <ul style="list-style-type: none"> <li>▪ In the case of soft drink in bottles with applied ceramic labelling, the requirements of regulations 11 and 14 [general requirements for labelling relating to 'Particulars in labelling' and 'Date marking'] may be printed in a reduced size of not smaller than 2 point lettering on the cap or crown of such bottle.</li> <li>▪ There shall be written in the label on a package containing flavoured syrup or flavoured cordial or flavoured drink the words "flavoured syrup" or "flavoured cordial" or "flavoured drink", or the name of such flavour in uniform lettering not less than 10 point conjoined with the words "flavoured syrup" or "flavoured cordial" or "flavoured drink", as the case may be.</li> <li>▪ The label on the package of a flavoured syrup or flavoured drink shall not include – <ul style="list-style-type: none"> <li>(a) any expression, pictorial representation or design that suggests or implies that the syrup or drink consists wholly or partly of fruit juice; or</li> <li>(b) a pictorial representation or design of a plant or part of a plant or a floral design that suggests or implies the presence of a plant in the syrup or drink</li> </ul> </li> <li>▪ There shall be written in the label on a package containing flavoured syrup or flavoured drink to which caffeine has been added a statement as to the presence of caffeine in that beverage.</li> <li>▪ Flavoured syrup and flavoured drink to which a permitted fruit flavouring substance has been added shall be labelled in uniform lettering of not less than 10 point with the name of such fruit or fruits, immediately followed by the word "flavour" or "flavoured".</li> <li>▪ Where fruit juice drink, fruit drink or flavoured drink is carbonated, there shall be written in the label on a package containing such drink – <ul style="list-style-type: none"> <li>(a) the word "carbonated fruit juice drink" or</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ e) code number indicating batch and/or date of manufacture;</li> <li>▪ Shall comply with requirements specified in the Malaysian Food Act 1983 and Food Regulations 1985.</li> </ul>
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	<p>“carbonated fruit drink” or “carbonated flavoured drink” as the case may be; or  (b) the words “carbonated (state 1the name of the fruit) juice drink” or “carbonated (state the name of the fruit) fruit drink” or “carbonated (state the name of the flavour) flavoured drink”, as the case may be.</p> <ul style="list-style-type: none"> <li>▪ Where flavoured drink or botanical beverage contains quinine in a proportion exceeding 40 mg/litre –  (a) the proportion of quinine added in mg/litre shall be stated on the label; and  (b) such product may be labelled as “tonic water”.</li> <li>▪ Subject to general requirements for labelling</li> <li>▪ Nutrition labelling is mandatory (regulation 18B of the Food Regulations 1985)</li> </ul>	
Methods of Analysis and Sampling	<ul style="list-style-type: none"> <li>▪ Additives, contaminants, microorganisms, mycotoxins</li> </ul>	<ul style="list-style-type: none"> <li>▪ Caffeine: HPLC method</li> <li>▪ Quinine: spectrophotometric method</li> <li>▪ Ascorbic acid (vitamin c): titrimetric method</li> <li>▪ Copper, arsenic, lead: Atomic absorption spectrophotometric method</li> <li>▪ Total colony count: pour plate method</li> <li>▪ Yeast &amp; moulds: pour plate method</li> <li>▪ Coliforms: MPN method</li> <li>▪ Sulphur dioxide: Rankin method</li> <li>▪ Benzoic acid and sorbic acid: HPLC method</li> </ul>

<Methods of Analysis> Carbonated Soft Drinks

Related legislation	Item	Specification	Analytical Methods	Reference
Food Regulations 1985	Food additives	Ester gum: <150 mg/l; Beta-cyclodextrin: <500 mg/l; Caffeine-containing plant extract as permitted flavouring substance: <200 mg/l; Sulphur dioxide: <140 mg/l; Benzoic acid: <350 mg/kg; Sorbic acid: <350 mg/kg; Agaric acid: <20 mg/kg; Total hydrocyanic acid: <1 mg/kg; Pulegone: <1 mg/kg; Quassin: <5 mg/kg; Quinine: <85 mg/kg; Thujones: <0.5 mg/kg	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Metal contaminant	Arsenic: <0.1 mg/kg; Lead: <0.2 mg/kg; Tin: <40 mg/kg; Mercury: <0.05 mg/kg; Cadmium: <1 mg/kg; Antimony: <0.15 mg/kg	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Pathogens	No pathogenic microorganisms	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Mycotoxins	Aflatoxin or other mycotoxins: < 5 µg/kg	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
MS 601:1994 - Specification for ready-to-drink beverages (carbonated and non-carbonated) (first revision)	Caffeine	max: 150 ppm (if used)	MS 601:1994, Appendix A	
	Quinine	40-85 ppm (if used)	MS 601:1994, Appendix B	
	Ascorbic acid	10 mg/100 ml (if used)	MS 601:1994, Appendix C	
	Copper	< 1.0 ppm	MS 601:1994, Appendix D	
	Arsenic	< 0.02 ppm	MS 601:1994, Appendix E	
	Lead	< 0.2 ppm	MS 601:1994, Appendix F	
	Total colony count	<50 cfu per ml	MS 601:1994, Appendix G	
	Viable yeast & moulds	<10 cfu per ml	MS 601:1994, Appendix H	
	Presumptive coliform organisms	negative	MS 601:1994, Appendix J	
	Sulphur dioxide	< 140 ppm	MS 601:1994, Appendix K	
	Benzoic & sorbic acid	< 350 ppm	MS 601:1994, Appendix M	

**Table 3.5-7 Case Study 3 Prepared Frozen Foods**

<b>Standard Item</b>	<b>Food Regulations 1985 (as at 1<sup>st</sup> September 2009)</b>	<b>MS 1125:2003</b>	<b>MS 1126:2003</b>
Name of the Standard	Food not elsewhere standardized	Meat Frankfurters	Meat Burgers
Scope	<ul style="list-style-type: none"> <li>Food not elsewhere standardized</li> </ul>	<ul style="list-style-type: none"> <li>Chilled and frozen meat frankfurters made from comminuted meat (beef, lamb and mutton, poultry, pork) with or without meat by-products in the form of a sausage</li> </ul>	<ul style="list-style-type: none"> <li>Chilled and frozen meat burgers made from comminuted meat (beef, lamb and mutton, poultry, pork).</li> </ul>
Description	<ul style="list-style-type: none"> <li>Food for which a standard has not been otherwise expressly prescribed by these Regulations.</li> </ul>	<ul style="list-style-type: none"> <li>Frankfurters shall be sausages that are either raw or cooked with or without smoking. The product is prepared from comminuted meat, seasoned with salt, herbs and spices, mixed with food additives, filler and binders and packed into casings made from cellulose, collage or intestines of animals. The frankfurters unless otherwise specified shall be skinless or skin on and uniform in size and shape.</li> </ul>	<ul style="list-style-type: none"> <li>Meat burgers shall be the meat product prepared from comminuted meat with or without the addition of fillers, binders, herbs and spices, salt, sweeteners and other food additives, and is sold in various shapes and sizes.</li> </ul>
Essential Composition and Quality Factor	<ul style="list-style-type: none"> <li>Not specified</li> </ul>	<ul style="list-style-type: none"> <li>All meat including mechanically deboned meat used shall be obtained from healthy animals slaughtered in a hygienically-managed slaughter-house and poultry processing plant.</li> <li>Trimblings which are bruised or from damaged parts of bellies shall not be used. Feet and other by-products including brain, gastrointestinal tract, paunches, udders, sweetbreads (thymus, pancreas), tripe, spleen, lungs, salivary glands, lymphatic glands, testicles, uterus, ovaries, cartilage and bony tissue shall not be used.</li> <li>Fillers – textured vegetable proteins, cereal rusks, flours or other wholesome edible materials of farinaceous origin may be used.</li> <li>Binders – Other non-meat proteins from soya bean or dairy products may be used.</li> <li>Fat – only wholesome, edible vegetable or</li> </ul>	<ul style="list-style-type: none"> <li>All meat including mechanically deboned meat used shall be obtained from healthy animals slaughtered in a hygienically-managed slaughter-house and poultry processing plant.</li> <li>Trimblings which are bruised or from damaged parts of bellies shall not be used. Feet and other by-products including brain, gastrointestinal tract, paunches, udders, sweetbreads (thymus, pancreas), tripe, spleen, lungs, salivary glands, lymphatic glands, testicles, uterus, ovaries, cartilage and bony tissue shall not be used.</li> <li>Fillers – textured vegetable proteins, cereal rusks, flours or other wholesome edible materials of farinaceous origin may be used.</li> <li>Binders – Other non-meat proteins from</li> </ul>

		<p>animal fat derived from the same species of animal used in the product, may be used.</p> <ul style="list-style-type: none"> <li>▪ Herbs and spices – all herbs, spices and extracts used shall be clean, sound, wholesome, and shall comply with the requirements of Malaysian Food Act 1983 and Food Regulations 1985.</li> <li>▪ Salt – edible white refined salt shall be used.</li> <li>▪ Sweeteners – only sugar (sucrose) conforming to the requirements in “MS 82:1989 – Specifications for white refined sugar for industrial use” or dextrose or other permissible sweeteners shall be used.</li> <li>▪ Finished product – either raw or thoroughly cooked or smoked, or flavoured and cooked and shall be delivered in good condition. They shall show no signs of deterioration at the time of delivery.</li> <li>▪ Flavour and appearance – shall be palatable, have a pleasant flavour, an attractive appearance with no visible damage, objectionable colour and odour.</li> <li>▪ Texture – shall be a good uniform texture, characteristic of the product.</li> <li>▪ Freedom from defects – pieces of hair, bristle, skin and particles of bone shall not be present in the product. The product shall be free from dirt and from insect and rodent contamination or any other foreign matter. Poisonous or deleterious substance shall not be present.</li> <li>▪ Contain <math>\geq 65\%</math> by weight of meat.</li> <li>▪ May contain meat by-products which include hearts, tongues, diaphragm meat and weasands up to a limit of 15% calculated on the weight of all ingredients with the exception of the added water.</li> <li>▪ Salt, sugar and seasoning all together shall not exceed 4% by weight.</li> </ul>	<p>soya bean or dairy products may be used.</p> <ul style="list-style-type: none"> <li>▪ Fat – only wholesome, edible vegetable or animal fat derived from the same species of animal used in the product, may be used.</li> <li>▪ Herbs and spices – all herbs, spices and extracts used shall be clean, sound, wholesome, and shall comply with the requirements of Malaysian Food Act 1983 and Food Regulations 1985.</li> <li>▪ Salt – edible white refined salt shall be used.</li> <li>▪ Sweeteners – only sugar (sucrose) conforming to the requirements in “MS 82:1989 – Specifications for white refined sugar for industrial use” or dextrose or other permissible sweeteners shall be used.</li> <li>▪ Finished product – uniform in size and shall be delivered in good condition. They shall show no signs of deterioration at the time of delivery.</li> <li>▪ Flavour and appearance – shall be palatable, have a pleasant flavour, an attractive appearance with no visible damage, objectionable colour and odour.</li> <li>▪ Texture – shall be a good uniform texture, characteristic of the product.</li> <li>▪ Freedom from defects – pieces of hair, bristle, skin and particles of bone shall not be present in the product. The product shall be free from dirt and from insect and rodent contamination or any other foreign matter. Poisonous or deleterious substance shall not be present.</li> <li>▪ Contain <math>\geq 65\%</math> by weight of meat.</li> <li>▪ Salt, sugar and seasoning all together shall not exceed 4% by weight.</li> </ul>
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		<ul style="list-style-type: none"> <li>▪ Moisture content: max. 60% by wet weight</li> <li>▪ Total fat content: max. 30% by wet weight</li> <li>▪ Protein content: min. 11% by wet weight</li> </ul>	<ul style="list-style-type: none"> <li>▪ Moisture content: max. 60% by wet weight</li> <li>▪ Total fat content: max. 30% by wet weight</li> <li>▪ Protein content: min. 15% by wet weight</li> </ul>
Food Additives	<ul style="list-style-type: none"> <li>▪ May contain permitted nutrient supplement, permitted food conditioner, permitted flavouring substance, permitted colouring substance and permitted flavour enhancer.</li> <li>▪ Shall not contain permitted non-nutritive sweetening substance.</li> <li>▪ No person shall use permitted preservative in food not elsewhere standardized without the prior approval of the Director</li> </ul>	<ul style="list-style-type: none"> <li>▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985.</li> </ul>	<ul style="list-style-type: none"> <li>▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985.</li> </ul>
Contaminant	<ul style="list-style-type: none"> <li>▪ Arsenic (As): &lt;1mg/kg</li> <li>▪ Lead (Pb) : &lt;2 mg/kg</li> <li>▪ Tin (Sn): &lt;40 mg/kg</li> <li>▪ Mercury (Hg): &lt;0.05 mg/kg</li> <li>▪ Cadmium (Cd): &lt;1 mg/kg</li> <li>▪ Antimony (Sb): &lt; 1mg/kg</li> <li>▪ 3-monochloropropane-1,2-diol (3-MCPD) for all foods containing acid hydrolysed protein (solid foods): 0.05 mg/kg</li> </ul>	<ul style="list-style-type: none"> <li>▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985.</li> </ul>	<ul style="list-style-type: none"> <li>▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985.</li> </ul>
Hygiene	<ul style="list-style-type: none"> <li>▪ Harmful, damaged packages prohibited</li> <li>▪ No pathogenic microorganisms.</li> <li>▪ Aflatoxin or any other mycotoxins: &lt;5 µg/kg</li> <li>▪ Food Hygiene Regulations</li> </ul>	<ul style="list-style-type: none"> <li>▪ After processing, frankfurters may be chilled before freezing and the freezing completed at -12°C or lower within 24 hours. The product shall be stored at a temperature at or below -18°C throughout the storage period.</li> <li>▪ Prepared and handled under strict hygienic</li> </ul>	<ul style="list-style-type: none"> <li>▪ After processing, the meat burgers may be chilled before freezing and the freezing completed at -12°C or lower within 8 hours. The product shall be stored at a temperature at or below -18°C throughout the storage period.</li> <li>▪ Prepared and handled under strict</li> </ul>

	2009	<p>conditions in accordance to Good Manufacturing Practices as specified in MS 1514 and MS 1480.</p> <ul style="list-style-type: none"> <li>▪ Unless agreed otherwise between the purchaser and the manufacturer or the packer, frankfurters shall be packed in properly sealed bags/packaging material made of suitable food grade flexible transparent packaging material or in hermetically sealed containers.</li> <li>▪ Mesophilic aerobic plate count (at 37°C for 48h): &lt;math&gt; &lt;10^4 &lt;/math&gt; (cooked), &lt;math&gt; &lt;10^5 &lt;/math&gt; (raw) per gram</li> <li>▪ Coliform count (at 37°C for 48h): &lt;math&gt; &lt;50 &lt;/math&gt; per gram</li> <li>▪ <i>E. coli</i>: negative</li> <li>▪ Salmonellae: negative</li> <li>▪ <i>S. aureus</i>: negative</li> <li>▪ Clostridia: negative</li> </ul>	<p>hygienic conditions in accordance to Good Manufacturing Practices as specified in MS 1514 and MS 1480.</p> <ul style="list-style-type: none"> <li>▪ Unless agreed otherwise between the purchaser and the manufacturer or the packer, meat burgers shall be packed in properly sealed bags/packaging material made of suitable food grade flexible transparent packaging material or in hermetically sealed containers.</li> <li>▪ Mesophilic aerobic plate count (at 37°C for 48h): &lt;math&gt; &lt;2.5 \times 10^5 &lt;/math&gt; per gram</li> <li>▪ Coliform count (at 37°C for 48h): &lt;math&gt; &lt;100 &lt;/math&gt; per gram</li> <li>▪ <i>E. coli</i>: negative</li> <li>▪ Salmonellae: negative</li> <li>▪ <i>S. aureus</i>: &lt;math&gt; &lt;100 &lt;/math&gt; per gram</li> </ul>
Weight and Measures	<ul style="list-style-type: none"> <li>▪ Not specified</li> </ul>	<ul style="list-style-type: none"> <li>▪ Not specified</li> </ul>	<ul style="list-style-type: none"> <li>▪ Not specified</li> </ul>
Labelling	<ul style="list-style-type: none"> <li>▪ There shall not be written in the label on a package containing food not elsewhere standardized or in an advertisement relating to that food any word or expression that compares a nutritional property or the ingredients of a food not elsewhere standardized with those of another food.</li> <li>▪ Food not elsewhere standardized shall not be described or presented in such a manner or by such name or pictorial or other representation or devices as is suggestive of another</li> </ul>	<ul style="list-style-type: none"> <li>▪ Each package shall be suitably labelled with the following: <ul style="list-style-type: none"> <li>a) the name of the product;</li> <li>b) a declaration of the presence of additives and a declaration indicating the common name of animal from which the meat is derived;</li> <li>c) name and address of the manufacturer and/or packer or the owner of the rights to manufacture or packing or the agent of any of them;</li> <li>d) minimum net weight in grams;</li> <li>e) list of ingredients in descending order of proportions used by weight in the product;</li> <li>f) storage instructions;</li> <li>g) for products which are not fully shelf-stable, i.e. which may be expected not to keep for at least one year in normal conditions of storage and sale, adequate</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Each package shall be suitably labelled with the following: <ul style="list-style-type: none"> <li>a) the name of the product;</li> <li>b) a declaration of the presence of additives and a declaration indicating the common name of animal from which the meat is derived;</li> <li>c) name and address of the manufacturer and/or packer or the owner of the rights to manufacture or packing or the agent of any of them;</li> <li>d) minimum net weight in grams;</li> <li>e) list of ingredients in descending order of proportions used by weight in the product;</li> <li>f) storage instructions;</li> <li>g) for products which are not fully shelf-stable, i.e. which may be expected not to keep for at least one</li> </ul> </li> </ul>

	<p>article of food of which it is intended to be an imitation or substitute or which it resembles.</p> <ul style="list-style-type: none"> <li>▪ The word “food not elsewhere standardized” shall not appear on the label of any package containing food not elsewhere standardized.</li> <li>▪ Subject to general requirements for labelling</li> <li>▪ Nutrient labelling is mandatory (regulation 18B of the Food Regulations 1985)</li> </ul>	<p>storage instructions shall be given on the label. These instructions shall state the recommended maximum temperature or conditions of storage and, in the case of products sold to the consumer, an indication of the recommended maximum period of storage in specified conditions shall be given;</p> <p>h) country of origin.</p> <ul style="list-style-type: none"> <li>▪ Shall comply with requirements specified in the Malaysian Food Act 1983 and Food Regulations 1985.</li> </ul>	<p>year in normal conditions of storage and sale, adequate storage instructions shall be given on the label. These instructions shall state the recommended maximum temperature or conditions of storage and, in the case of products sold to the consumer, an indication of the recommended maximum period of storage in specified conditions shall be given;</p> <p>h) country of origin.</p> <ul style="list-style-type: none"> <li>▪ Shall comply with requirements specified in the Malaysian Food Act 1983 and Food Regulations 1985.</li> </ul>
Methods of Analysis and Sampling	<ul style="list-style-type: none"> <li>▪ Additives, contaminants, microorganisms, mycotoxins</li> </ul>	<ul style="list-style-type: none"> <li>▪ Moisture content: oven-drying method (MS 954:Part 1:2000)</li> <li>▪ Total fat content: acid hydrolysis method (MS 954: Part 4:1985)</li> <li>▪ Protein content: Kjeldahl method (MS 954: Part 11:1986)</li> <li>▪ Salmonellae: detection (MS 1110:Part 1:1988)</li> <li>▪ Coliforms and <i>E. coli</i>: detection and enumeration (MS 1110:Part 2:1989)</li> <li>▪ Mesophilic aerobic plate count: enumeration (MS 1110:Part 3:1989)</li> <li>▪ <i>S. aureus</i>: detection and enumeration (MS 1110:Part 4:1989)</li> <li>▪ Clostridia: detection (MS 1110:Part 5:1992)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Moisture content: oven-drying method (MS 954:Part 1:2000)</li> <li>▪ Total fat content: acid hydrolysis method (MS 954: Part 4:1985)</li> <li>▪ Protein content: Kjeldahl method (MS 954: Part 11:1986)</li> <li>▪ Salmonellae: detection (MS 1110:Part 1:1988)</li> <li>▪ Coliforms and <i>E. coli</i>: detection and enumeration (MS 1110:Part 2:1989)</li> <li>▪ Mesophilic aerobic plate count: enumeration (MS 1110:Part 3:1989)</li> <li>▪ <i>S. aureus</i>: detection and enumeration (MS 1110:Part 4:1989)</li> <li>▪ Clostridia: detection (MS 1110:Part 5:1992)</li> </ul>

<Methods of Analysis> Prepared Frozen Foods

Related legislation	Item	Specification	Analytical Methods	Reference
MS 1125:2003 - Meat Frankfurters - Specifications	Moisture content	Max: 60% by wet weight	MS 954:Part 1:2000	
	Total fat content	Max: 30% by wet weight	MS 954:Part 4:1985	
	Protein content	Min: 11% by wet weight	MS 953:Part 11:1986	
	Sampling	As described in Annex A	MS 1125:2003 Annex A	
	Mesophilic aerobic plate count	<10 <sup>4</sup> cfu/g (cooked); <10 <sup>5</sup> cfu/g (raw), 37°C for 48h	MS 1110:Part 3:1989	
	Coliform count	< 50 cfu/g, 37°C for 48h	MS 1110:Part 2:1989	
	Salmonellae	absent per 25g	MS 1110:Part 1:1988	
	<i>E. coli</i>	absent, MPN	MS 1110:Part 2:1989	
	<i>S. aureus</i>	absent, MPN	MS 1110:Part 4:1989	
	Clostridia	absent	MS 1110:Part 5:1992	
MS 1126:2003 - Meat Burgers - Specifications	Moisture content	Max: 60% by wet weight	MS 954:Part 1:2000	
	Total fat content	Max: 30% by wet weight	MS 954:Part 4:1985	
	Protein content	Min: 15% by wet weight	MS 953:Part 11:1986	
	Sampling	As described in Annex A	MS 1126:2003 Annex A	
	Mesophilic aerobic plate count	< 2.5 x 10 <sup>5</sup> cfu/g, 37°C for 48h	MS 1110:Part 3:1989	
	Coliform count	< 100 cfu/g, 37°C for 48h	MS 1110:Part 2:1989	
	Salmonellae	absent per 25g	MS 1110:Part 1:1988	
	<i>E. coli</i>	MPN, absent, MPN	MS 1110:Part 2:1989	
	<i>S. aureus</i>	< 100 cfu/g, MPN	MS 1110:Part 4:1989	

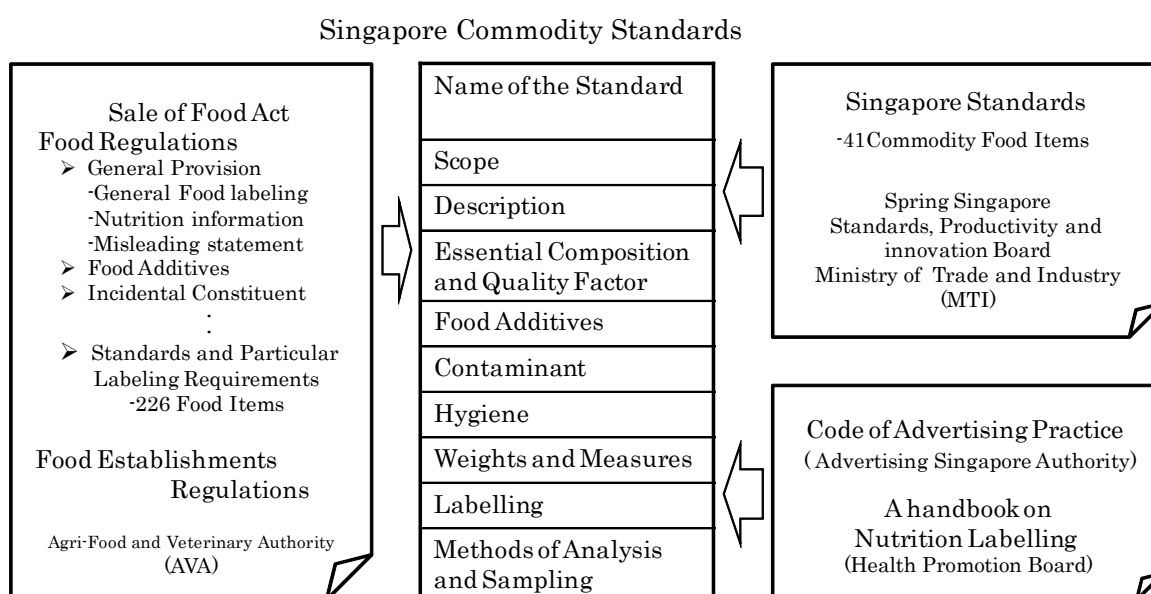
## 3.5.2 Singapore

### 3.5.2.1 Food Administration

Administrative body responsible for food standards, safety and hygiene control is consolidated in Agri-Food and Veterinary Authority (AVA) of Ministry of National Development. AVA administers wide range of animals, pets, agriculture and fishery, as well as foods.

### 3.5.2.2 Summary Chart of relationship of Food Law System and Singapore Commodity Standards

The chart is presented in **Figure 3.5-2**.



**Figure 3.5-2 Singapore Commodity Standards and Relevant Laws**

### 3.5.2.3 Sale of Food Act

AVA (Agri-Food and Veterinary Authority) collectively administers Sale of Food Act. AVA was a bureau which originally administered primary products. In 2000, AVA was reorganized to administer quality and safety of food related substances for securing food safety.

#### (1) Sale of Food Act-2002<sup>1</sup>

Sale of Food Act is established for securing wholesomeness and purity of food and fixing standards for preventing the sale or other disposition, or the use of articles dangerous or injurious to health, and for providing for the regulation of food establishments.

<sup>1</sup>[http://www.ava.gov.sg/NR/rdonlyres/0CA18578-7610-4917-BB67-C7DF4B96504B/8725/Attach59\\_legislation\\_SaleofFoodAct.pdf](http://www.ava.gov.sg/NR/rdonlyres/0CA18578-7610-4917-BB67-C7DF4B96504B/8725/Attach59_legislation_SaleofFoodAct.pdf)

## **(2) Food Regulation-2006<sup>2</sup>**

Supplementary provisions of Sale of Food Act are compiled in Food Regulation and is continuously updated on amendment and newly setting of regulations. Food Regulation provides detailed general requirements for labeling, food additives, contaminants, bacterial toxin container packaging, irradiated food, and commodity standards. In the Chapter 4, commodity standards and the special labeling requirements for 226 food items (FY 2009 Report Table 3.5-8) are listed. It stipulated minimum definition, component standards and special labeling requirements.

## **(3) Food Establishments Regulations-2009<sup>3</sup>**

Food Establishments Regulation in Sale of Food Act regulates provides general food hygiene requirements against food handlers and food establishment.

### **3.5.2.4 Singapore Standards**

Singapore Standard (SS) exists as commodity standard which are administered by Standards, Productivity and innovation Board (Spring Singapore) of Ministry of Trade and Industry (MTI). While, Singapore Standards is national standards for all industries pursuant to ISO, it is basically voluntary standards (it may become mandatory standards when issues related to safety, environment and health are referred by administrative authority.)

Singapore Standards shown in FY2009 Report Table 3.5-9 are in the same format as for Codex Commodity Standards.

The number of Singapore Standards set by Food Standard Committee is approximately 90. And commodity standards excluding for analytical methods and implementation are 41 standards (FY 2009 Report Table 3.5-10) out of them. These are basically voluntary standards, but, certified mark can be labeled by obtaining official certification.

### **3.5.2.5 Methods of Analysis for General Foods**

Methods of analysis for "General Foods" are shown in **Table 3.5-A2**. Methods of analysis for the food categories taken up in the Case Study are described in the charts under the tables for the standards for those food

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<sup>2</sup><http://www.ava.gov.sg/NR/rdonlyres/OCA18578-7610-4917-BB67-C7DF4B96504B/11405/FoodRegulations1.pdf>

<sup>3</sup>[http://www.ava.gov.sg/NR/rdonlyres/OCA18578-7610-4917-BB67-C7DF4B96504B/8729/Attach64\\_legislation\\_Sale\\_Fd\\_Estb\\_rules.pdf](http://www.ava.gov.sg/NR/rdonlyres/OCA18578-7610-4917-BB67-C7DF4B96504B/8729/Attach64_legislation_Sale_Fd_Estb_rules.pdf)

categories (**Tables 3.5-11 and 3.5-12**), respectively.

### **3.5.2.6 Case Study**

#### **(1) Instant Noodles**

Instant noodles are defined as "Pasta" including noodles, beehoon, macaroni, spaghetti and "mee" in Food Regulations-2006. The standard is not specific for instant noodles. Singapore Standard is the same, therefore, dried noodles and pasta products (SS219: 1979) is also presented in **Table 3.5-11** as reference.

#### **(2) Carbonated Soft Drinks**

In Food Regulations-2006, any standards only for carbonated soft drinks are not set. It covers variety of items like common soft drinks, and is different from Japanese standard in more food items excluded from soft drink. Singapore Standards for carbonated and non-carbonated beverages (SS 62:1997) set standards for wide variety of beverages including carbonated soft drinks (**Table 3.5-12**).

#### **(3) Prepared Frozen Foods**

In Food Regulation-2006, any standards only for prepared frozen foods are not set. Also, in Singapore Standard, there is sole standard for disposition and handling of quick frozen foods (CP 46: 1989).

**Table 3.5-A2 Methods of Analysis for General Foods**

Related legislation	Item	Specification	Analytical Methods	Reference
Food Regulations	Incidental Constituents	No person shall import, sell, advertise, manufacture, consign or deliver any food containing an incidental constituent except as otherwise permitted by these Regulations	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Pesticide residues	<ol style="list-style-type: none"> <li>1. No person shall import, sell, advertise, manufacture, consign or deliver any article of food containing any pesticide residue other than those specified in column 1, in relation to those articles specified in column 3 and in the proportion specified in column 2 of the Ninth Schedule.</li> <li>2. Where it is not so provided in these Regulations, the pesticide residue contained in any food shall not exceed the limits as recommended by the Codex Alimentarius Commission.</li> <li>3. A manufactured or mixed food containing one or more of the foods in which pesticide residues are permitted shall not contain such residues in greater amount than is permitted for the quantity of the food or foods containing residues used in the preparation of the manufactured or mixed food.</li> <li>4. No person shall import, sell, advertise, manufacture, consign or deliver any article of food containing the residue of 2 or more of the pest</li> </ol>	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Heavy metals, arsenic, lead and copper	No person shall import, sell, advertise, manufacture, consign or deliver any article of food containing arsenic, lead and copper in amounts in excess of those specified in the Tenth Schedule; Tin: <250 ppm; Cadmium: <0.2 ppm; Antimony: <1.0 ppm; Selenium: <1.0 ppm	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Antibiotic residues	No person shall import, sell, advertise, manufacture, consign or deliver any article of food intended for human consumption which contains detectable antibiotic residues or their degradation products (except nisin in the preservation of cheese and canned foods which have been sufficiently heat processed to destroy spores of <i>Clostridium botulinum</i> )	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore



**Table 3.5-11 Case Study 1 Instant Noodles**

Standard Item	Food Regulations (as at 1 <sup>st</sup> September 2006)	SS 219:1979
Name of the Standard	Pasta	Dried noodles and pasta products
Scope	<ul style="list-style-type: none"> <li>▪ Noodles of various types, including products which are commonly known as “mee” (“mian”) or other “mee” products.</li> <li>▪ Noodles including “spaghetti”, “macaroni” and the product commonly known as “mee sua” (“mian xian”).</li> <li>▪ Rice noodles of various types, including products which are commonly known as “kuay teow” (“guo tiao”), “bee tai mak” (“mi shai mu”) and “hor fun” (“he fen”), “bee hoon” (“mi fen”).</li> </ul>	<ul style="list-style-type: none"> <li>▪ Dried noodle products covering noodles, instant noodles and “mian xian”.</li> </ul>
Description	<ul style="list-style-type: none"> <li>▪ Any product which is prepared by drying of extruded or moulded units of dough or by steaming of slitted dough with or without drying.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Prepared from wheat flour, with or without the addition of sodium chloride, sodium bicarbonate, permitted colouring, flavouring matters and other food additives. The instant noodles could be flavoured separately by means of the soup base sachets. This group of products shall be subjected to a sheeting process. The products shall be in the form of rods or ribbons except for “mian xian” which shall be in the form of long thin threads.</li> </ul>
Essential Composition and Quality Factor	<ul style="list-style-type: none"> <li>▪ Principally of a cereal meal.</li> <li>▪ May contain common salt, eggs, various kinds of starch, edible fats and oils, and any other foodstuffs.</li> <li>▪ Noodles except those with &lt;20% moisture (includes “mee” and “mee products”): &gt;50% flour</li> <li>▪ Noodles with &lt;20% moisture (includes “spaghetti”, “macaroni” and “mee sua”): &gt;70% wheat flour</li> <li>▪ Rice noodles except those with &lt;20% moisture (including “kuay teow”, “bee tai mek” and “hor fun”: &gt;50% rice flour</li> <li>▪ Rice noodles with &lt;20% moisture: &gt;80% rice flour</li> </ul>	<ul style="list-style-type: none"> <li>▪ Made from raw materials which are clean, wholesome and free from evidence of insect and rodent infestation and other objectionable matter.</li> <li>▪ The finished product shall be of good colour and reasonably free from broken units and dark specks.</li> <li>▪ When cooked, the products shall be tender and firm and possess a good characteristic flavour and odour.</li> <li>▪ Instant noodles shall be cooked within 3 minutes.</li> <li>▪ Protein content: min. 9.0% on dry weight basis</li> <li>▪ Moisture content: max. 13%</li> <li>▪ Total solids in gruel: max. 8%</li> <li>▪ Free fatty acids, as oleic acid of extracted oil (applies only to noodles products which have been deep fried in</li> </ul>

		<ul style="list-style-type: none"> <li>edible oils during processing): max. 0.8%</li> <li>▪ Peroxide value of extracted oil (applies only to noodles products which have been deep fried in edible oils during processing): 10.0 per kg oil</li> </ul>
Food Additives	<ul style="list-style-type: none"> <li>▪ Permitted flavouring agents</li> <li>▪ Permitted colouring matters</li> <li>▪ Subject to general requirements for food additives.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Not specified</li> </ul>
Contaminant	<ul style="list-style-type: none"> <li>▪ Arsenic (As): &lt;1 ppm</li> <li>▪ Lead (Pb): &lt;2 ppm</li> <li>▪ Copper (Cu): &lt;20 ppm</li> <li>▪ Tin (Sn): &lt;250 ppm</li> <li>▪ Cadmium (Cd): &lt;0.2 ppm</li> <li>▪ Antimony (Sb): &lt;1 ppm</li> <li>▪ Selenium (Se): &lt;1 ppm</li> </ul>	<ul style="list-style-type: none"> <li>▪ Not specified</li> </ul>
Hygiene	<ul style="list-style-type: none"> <li>▪ Package or container made with compounds known to be carcinogenic, mutagenic, teratogenic or any other poisonous or injurious substance.</li> <li>▪ Mycotoxins: negative</li> <li>▪ Total Count at 37°C for 48 hours: Not more than 1000,000 per mg</li> <li>▪ Sale of Food (Food Establishments) Regulations</li> </ul>	<ul style="list-style-type: none"> <li>▪ The product shall be suitably packaged to protect the contents from contamination and deterioration under normal conditions of storage and transport.</li> </ul>
Weight and Measures	<ul style="list-style-type: none"> <li>▪ Not specified</li> </ul>	<ul style="list-style-type: none"> <li>▪ Not specified</li> </ul>
Labelling	<ul style="list-style-type: none"> <li>▪ If labelled with the word “egg” or any word of similar meaning: &gt;4% egg solids calculated on dry basis</li> <li>▪ Subject to general requirements for labelling.</li> <li>▪ Nutrition labelling is required only if a nutritional claim is made (regulation 8A of the Food Regulations)</li> </ul>	<ul style="list-style-type: none"> <li>▪ The packet shall be legibly marked as follows: <ul style="list-style-type: none"> <li>a) Name and type of the product</li> <li>b) Name and address of the manufacturer and/or his registered trade mark</li> <li>c) Batch or code number</li> <li>d) Net weight</li> </ul> </li> </ul>
Methods of Analysis and Sampling	<ul style="list-style-type: none"> <li>▪ Food additives, contaminants, microorganisms, mycotoxins</li> </ul>	<ul style="list-style-type: none"> <li>▪ Protein content: Improved Kjeldahl method</li> <li>▪ Moisture content: Air-oven method</li> <li>▪ Total solids in gruel</li> <li>▪ Free fatty acids and peroxide value of extracted oil</li> </ul>

<Methods of Analysis> Instant Noodles

Related legislation	Item	Specification	Analytical Methods	Reference
Food Regulations	Food additives	Permitted flavouring agents & colouring matters	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Metal contaminants	Arsenic: <1.0 ppm; Lead: <2.0 ppm; Copper: <20 ppm; Tin: <250 ppm; Cadmium: <0.2 ppm; Antimony: <1.0 ppm; Selenium: <1.0 ppm	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Mycotoxins	Absence	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Total colony count	< 10 <sup>5</sup> cfu/g, 37 °C for 48h	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
SS 219: 1979 - Specifications for dried noodles and pasta products	Protein content	> 9% on dry weight basis	SS 219:1979 Appendix A	
	Moisture content	< 13%	SS 219:1979 Appendix B	
	Total solids in gruel	< 8%	SS 219:1979 Appendix C	
	Free fatty acids	< 0.8%	SS 219:1979 Appendix D	
	Peroxide value of extracted oil	10.0 miliequivalents of peroxide oxygen per kg oil	SS 219:1979 Appendix D	

**Table 3.5-12 Case Study 2 Carbonated Soft Drinks**

<b>Standard Item</b>	<b>Food Regulations (as at 1<sup>st</sup> September 2006)</b>	<b>SS 62:1997</b>
Name of the Standard	Soft drinks	Carbonated and non-carbonated beverages
Scope	Any flavoured drink ready for consumption without dilution Soda water, Indian or quinine tonic water, and any carbonated water whether flavoured or unflavoured; Ginger beer and any beverage made from any harmless herbal or botanical substance; Fruit drink or fruit crush.	Fruit-flavoured carbonated beverages Flavoured carbonated beverages Beverages containing natural extracts Non-flavoured and unsweetened carbonated beverages
Description	Soft drink shall be any substance in liquid or solid form intended for sale as drink for human consumption, either with or without dilution	Non-alcoholic carbonated beverages are beverages prepared from refined sugar, or syrup base, flavours and/or acidulants with or without fruit juices and are artificially charged with carbon dioxide in sealed packages.
Essential Composition and Quality Factor	Not specified	Potable water – colourless, clear, odourless, pleasant to taste and safe for human consumption. Carbon dioxide – minimum purity of 99.5 (v/v) carbon dioxide. It shall be colourless and odourless and shall not contain any extraneous mineral or organic substances. Sugar – pure, white, crystalline solids giving a polarization reading of at least 99.8°S and should be free from moulds and yeasts. Sugar may be substituted with syrup base. Fruit concentrates – of a quality that gives a satisfactory flavour and colour Flavourings – natural flavourings are those obtained from fruits or plants by extraction, distillation, expression or any other suitable process. Artificial flavours are those obtained from chemical synthesis. Finish product – free from dust, dirt, extraneous fibres, hairs, rags, insect and rodent contamination, fragments of cork or glass or other foreign matter. Flavour – have a well-balanced and pleasant flavour. They shall be free from off-flavours and off-odours. Sugar content – min. 5 °Brix Fruit juice content – min. 5% Carbonation – 1.5 volume

Food Additives	<p>May contain:</p> <p>ester gum: &lt;100 ppm</p> <p>sucrose acetate isobutyrate: &lt;300 ppm</p> <p>dimethyl polysiloxane: &lt;10 ppm</p> <p>dimethyl dicarbonate: &lt;250 ppm</p> <p>sulphur dioxide: &lt;70 ppm</p> <p>benzoic acid: &lt;160 ppm</p> <p>methyl or propyl para-hydroxy benzoate: &lt; 160 ppm</p> <p>sorbic acid: &lt;300 ppm</p> <p>quillaia: &lt;200 ppm</p> <p>Subject to general requirements for food additives.</p>	<p>Acidulants – Include citric acid, tartaric acid, malic acid, lactic acid, phosphoric acid, ascorbic acid, acetic acid, adipic acid, fumaric acid, hydrochloric acid, <u>dl</u>-lactic acid, <u>dl</u>-malic acid, <u>ortho</u>-phosphoric acid and L (+) tartaric acid.</p> <p>Permitted food colours, clouding agents, foaming agents, emulsifying and stabilising agents, and preservatives.</p>
Contaminant	<p>Arsenic (As): &lt;0.1 ppm</p> <p>Lead (Pb): &lt;0.2 ppm</p> <p>Copper (Cu): &lt;2 ppm</p> <p>Tin (Sn): &lt;250 ppm</p> <p>Cadmium (Cd): &lt;0.2 ppm</p> <p>Antimony (Sb): &lt;1 ppm</p> <p>Selenium (Se): &lt;1 ppm</p>	<p>Arsenic – &lt;0.1 mg/kg</p> <p>Lead – &lt;0.2 mg/kg</p> <p>Copper – &lt;2 mg/kg</p>
Hygiene	<p>Package or container made with compounds known to be carcinogenic, mutagenic, teratogenic or any other poisonous or injurious substance.</p> <p>Mycotoxins: negative</p> <p>Escherichia coli: 20 per ml</p> <p>Total Count at 37°C for 48 hours: Not more than 100,000 per ml</p> <p>Sale of Food (Food Establishments) Regulations</p>	<p>Processing site for carbonated and non-carbonated beverages shall be kept hygienically clean and shall be free from flies, bees, other insects and rodents.</p> <p>Total bacteria count: 200 per 20ml; 10 per ml</p> <p>Coliform count: Negative per 20ml; Negative per 10ml</p> <p>Yeast and mould count: Negative per 20ml; Negative per ml</p>
Weight and Measures	Not specified	Not specified
Labelling	<p>The term “non-alcoholic” shall be reserved only for those products which contain not more than 0.5% (v/v) alcohol at 20°C.</p> <p>Any drink for human consumption without dilution which incorporates the name of a fruit, vegetable or flower in its name but does not use the juice of that fruit, vegetable or flower shall be labelled in the following manner:</p>	<p>Each package shall be legibly and indelibly marked as follows:</p> <ol style="list-style-type: none"> <li>Name of product;</li> <li>Name and address of manufacturer, packer or vendor and/or his registered trademark;</li> <li>Net volume;</li> <li>Batch or code number;</li> <li>Date marking.</li> </ol>

	<p>(a) (Name of fruit, vegetable or flower)–ade  (b) (Name of fruit, vegetable or flower) flavoured drink; and  (c) Imitation (name of fruit, vegetable or flower) drink.</p> <p>Subject to general requirements for labelling</p> <p>Nutrition labelling is required only if a nutritional claim is made (regulation 8A of the Food Regulations)</p>	
Methods of Analysis and Sampling	Food additives, contaminants, microorganisms, mycotoxins	<p>Sugar content: hydrometer or refractometer method  Gas volume  Total colony count: Membrane filter enumeration method  Coliforms: Membrane filter enumeration method  Coliforms (for pulpy sample): MPN method  Yeast &amp; moulds: Membrane filter enumeration method  Yeast &amp; moulds (for pulpy sample): Spread plate method  Arsenic, lead, copper: Atomic absorption spectrophotometric method</p>

< Methods of Analysis > Carbonated Soft Drinks

Related legislation	Item	Specification	Analytical Methods	Reference
Food Regulations	Food additives	ester gum: <100 ppm; sucrose acetate isobutyrate: <300 ppm; dimethyl polysiloxane: <10 ppm; dimethyl dicarbonate: <250 ppm; sulphur dioxide: <70 ppm; benzoic acid: <160 ppm; methyl or propyl para-hydroxy benzoate: <160 ppm; sorbic acid: <300 ppm; quillaia: <200 ppm	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Metal contaminants	Arsenic: <0.1 ppm; Lead: <0.2 ppm; Copper: <2.0 ppm; Tin: <250 ppm; Cadmium: <0.2 ppm; Antimony: <1.0 ppm; Selenium: <1.0 ppm	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Mycotoxins	Absence	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Total colony count	< 10 <sup>5</sup> cfu/ml, 37°C for 48h	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	<i>E. coli</i>	< 20 cfu/ml	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
SS 62: 1997 - Specifications for Carbonated and non-carbonated beverages	Sugar content	> 5 Degrees Brix, 20 °C	SS 62:1997 Appendix A	
	Gas volume	1.5 volume	SS 62:1997 Appendix B	
	Total colony count	< 200 cfu/20ml or <10 cfu/ml	SS 62:1997 Appendix C & D	
	Coliforms	absent per 20 ml or absent per 10 ml	SS 62:1997 Appendix E & F	
	Viable yeasts & moulds	absent per 20 ml or absent per ml	SS 62:1997 Appendix G & H	
	Metal contaminants	Arsenic: <0.1mg/kg; Lead: <0.2 mg/kg; Copper: <2 mg/kg	SS 62:1997 Appendix I, J & K	





### 3.5.3 Philippines

The 1987 Constitution of the Philippines<sup>1</sup> stipulates that "the State shall establish and maintain an effective food and drug regulatory system and undertake appropriate health, manpower development, and research, responsive to the country's health needs and problems". Based on the above, Consumer Act of the Philippines<sup>2</sup> requires "to develop and provide safety and quality standards for consumer products" and give the enforcement power Department of Health to respect with foods and pharmaceuticals.

#### 3.5.3.1 Food Administration

Administrative bodies mainly responsible to food safety and hygienic control are Department of Health and Department of Agriculture. Major roles of these departments are shown in **Table 3.5-13**.

**Table 3.5-13 Food Safety Control System in Philippines**

	Safety and Hygiene of Agricultural Products and Primary Processed Foods	Safety and Hygiene of Processed Foods
	Department of Agriculture (DA)	Department of Health (MOH)
Agricultural products	Bureau of Plant Industry (BPI)	Bureau of Food and Drugs (BFDA) The Law was amended in August 2009 to strengthen capability of BFDA and to augment human resources. Under new law, BFAD was renamed into Food and Drug Administration (FDA).
Marine Products	Bureau of Fisheries and Aquatic Resources (BFAR)	
Livestock products	Bureau of Animal Industry (BAI) National Meat Inspection Service (NMIS)	
	Bureau of Agricultural and Fisheries Product Standard (BAFPS)	

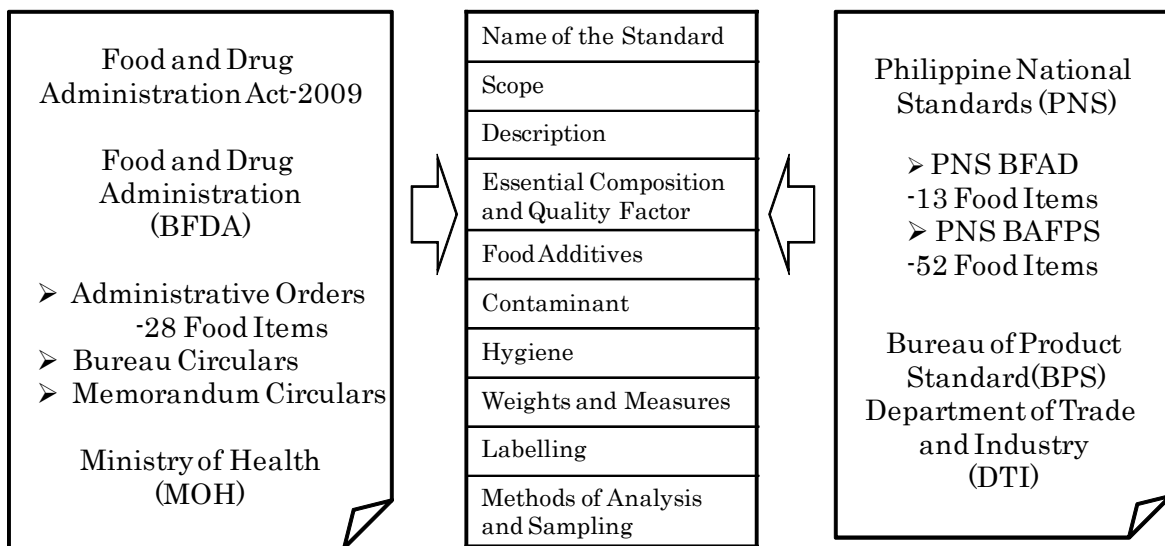
#### 3.5.3.2 Food Law System and Commodity Standards

Chart of the relationship is shown in **Figure 3.5-3**.

<sup>1</sup> [http://www.gov.ph/index.php?option=com\\_content&task=view&id=200034&Itemid=26](http://www.gov.ph/index.php?option=com_content&task=view&id=200034&Itemid=26)

<sup>2</sup> [http://www.gov.ph/index.php?option=com\\_content&task=view&id=200034&Itemid=26](http://www.gov.ph/index.php?option=com_content&task=view&id=200034&Itemid=26)

## Philippine Commodity Standards



**Figure 3.5-3 Philippine Commodity Standards and Relevant Laws**

### (1) Food and Drug Administration Law<sup>3</sup>

It is a major food law of the Republic of the Philippines known as the Republic Act 9711 (2009 revised version of Republic Act 3720).

This Law was established with purpose of ensuring "safety and purity of food and cosmetics, and safety, efficacy and quality of drugs and medical devices intended for use of the public", and authorizes Department of Health (MOH) to enforce regulatory policy including measures for setting of evaluation method for quality of food standards and providing safe and clean foods.

Moreover, the Law transfers responsibilities of implementing this Law to Bureau of Food and Drugs (BFDA) and delegates the developing rules and regulations for safety of foods and drugs, and common standards and guidelines in the use of nutrition and health claims in foods and drugs.

Specific rules and regulations are implemented by publication of Administrative Order (AO), Bureau circulars (BC) or Memorandum Circulars (MC).

### (2) Administrative Order and Circulars<sup>4</sup>

Administrative orders related to commodity standards are presented in FY 2009 Report Table 3.5-14. As they are relatively limited coverage, the Philippines is half way to standardization. When prompt action is needed, relevant administrative bodies coordinate to develop mandatory standards

<sup>3</sup> <http://www.bfad.gov.ph/cfc/pdf.cfm?pdfid=1232>

<sup>4</sup> <http://www.bfad.gov.ph/default.cfm?CFID=89868&CFTOKEN=85282931#>

within the framework of Philippine national standards described below. Examples of composition of commodity standards set by AO and BC are shown in FY2009 Report (p.98 in the upper part).

### **(3) Philippine National Standards (PNS)**

From the standpoint of commodity standards, Philippine National Standards (PNS) set by Department of Trade and Industry (DTI) and Department of Product Standard (DPS) occupies important place. It is within the framework of PNS for all industries pursuant to ISO. Philippine National Standards is basically voluntary standard, but, certification mark can be labeled by obtaining official certification. Format of the standard are same as that of Codex Standard. Comparison is shown in FY2009 Report Table 3.5-15.

Philippine National Standards in ICS code 67 (Food technology) related to food are totally 89 standards. Twenty one standards with PNS BFAD which is standard number set by DTI and DPS together with Bureau of Food and Drugs (BFDA) are mandatory standards (FY2009 Report Table 3.5-16). There are 13 commodity standards excluding standards for processing.

Also, there are some standards for fresh foods attached PNS BEAPS standard number set with cooperation of Bureau of Agricultural and Fisheries Product Standard (BAFPS). Table 3.5-17 shows standards for specifications, grade and classification of specific food, and these are mandatory standards as well.

#### **3.5.3.3 Methods of Analysis for General Foods**

Methods of analysis for "General Foods" are shown in **Table 3.5-A3**. Methods of analysis for the food categories taken up in the Case Study are described in the charts under the tables for the standards for those food categories (**Tables 3.5-18 and 3.5-19**), respectively.

#### **3.5.3.4 Case Study**

##### **(1) Instant Noodles**

Pancit Conton (PNS BFAD 18:2008) which are like instant pan-fried noodles are taken (**Table 3.5-18**) as the similar food,

##### **(2) Carbonated Soft Drinks**

No standard covers only carbonated soft drinks like in Japan. There are National Standards for citrus beverage products (PNS BFAD 11: 2007) which can be applied for wide range of products like Japanese standards for

carbonated soft drinks (**Table 3.5-19**).

### **(3) Prepared Frozen Foods**

While there are standards for frozen squid, frozen shrimp and frozen fish, no standard more like Japanese standard for prepared frozen food.

**Table 3.5-A3 Methods of Analysis for General Foods**

<b>Food Category</b>	<b>Related legislation</b>	<b>Item</b>	<b>Specification</b>	<b>Analytical Methods</b>	<b>Reference</b>
Food in general (Applied to all foods)	FDA Circular 2006-016: Updated list of food additives	Food additives	As specified in the FDA Circular 2006-016	International standards (AOAC, ISO, APHA, etc.)	Email communication with FDA Philippines
	FDA Circular 01-As. 2004: Guidelines for the assessment of microbiological quality of processed foods	Microbiological quality of processed foods	As specified in the FDA Circular 01-As. 2004	International standards (AOAC, ISO, APHA, etc.)	Email communication with FDA Philippines
	FDA Circular 2010-008: Adoption of the Codex Standards on Food Contaminants in Processed Food	Food contaminants	As specified in the FDA Circular 2010-008, following Codex Alimentarius Standards on Food Contaminants	International standards (AOAC, ISO, APHA, etc.)	Email communication with FDA Philippines

**Table 3.5-18 Case Study 1 Instant Noodles**

Standard Item	PNS/BFAD 18:2008
Name of the Standard	Flour sticks (pancit canton)
Scope	<ul style="list-style-type: none"> <li>■ Processed flour sticks (pancit canton) for human consumption</li> </ul>
Description	<ul style="list-style-type: none"> <li>■ Flour sticks or 'pancit canton' are molded and fried noodle strands, which can be consumed with or without prior cooking preparation, made from wheat flour, singly or in combination with other flours and/or starches, water and salt with or without added optional ingredients.</li> </ul>
Essential Composition and Quality Factor	<ul style="list-style-type: none"> <li>■ Basic Ingredients: wheat flour; potable water; salt; cooking oil</li> <li>■ Optional Ingredients: other flours and starches; fresh eggs or egg powder; fresh or powdered fruit and vegetables; seasoning and condiments.</li> <li>■ General requirements – Moisture content: &lt;8%; Free fatty acids: 0.5% (as oleic acid); Sensory properties: uniform size of noodle strands with acceptable colour, no rancid odour and taste and crispy texture.</li> <li>■ Types of defects – Foreign matter: any matter which has not been derived from the components or constituents of ingredients used in the product; does not pose a threat to human health and can be recognized without magnification or is present at a level determined by a method including magnification that indicates non-compliance with good manufacturing and sanitation practices.</li> <li>■ Appearance:               <ul style="list-style-type: none"> <li>(a) Brownish or blackish specks or discolouration that affects &gt; 5% of the weight of the sample unit after manufacture;</li> <li>(b) Loose or broken noodle strands present in weights &gt;5 % of the weight of the sample unit after manufacture.</li> </ul> </li> <li>■ Odour and flavour:               <ul style="list-style-type: none"> <li>(a) Objectionable odour and flavour indicative of deterioration or contamination (like rancidity, fermentation or taints) on uncooked and cooked noodles;</li> <li>(b) Pronounced burnt odour on uncooked and cooked noodles.</li> </ul> </li> </ul>
Food Additives	<ul style="list-style-type: none"> <li>■ In accordance to BFAD Bureau Circular No. 2006-016, the Codex Alimentarius Commission and/or authority for these products.</li> <li>■ Permitted food additives to be used: <u>Acid regulator</u> NaOH – GMP <u>Antioxidant</u></li> </ul>

	<p>BHA – Max: 100 mg/kg; BHT – Max: 200 mg/kg; Tocopherol – GMP</p> <p><u>Colour</u></p> <p>FD&amp;C Yellow #5 (Tartrazine) – Max: 300 mg/kg; FD&amp;C Yellow #6 (Sunset Yellow) - Max: 300 mg/kg</p> <p><u>Flour treatment agent</u></p> <p>Phosphates (as Na or K Phosphates) – Max: 2,200 mg/kg</p> <p><u>Raising agent/stabilizer</u></p> <p>Na<sub>2</sub>CO<sub>3</sub> – Max: 2,600 mg/kg; K<sub>2</sub>CO<sub>3</sub> – Max: 2,600 mg/kg</p> <ul style="list-style-type: none"> <li>■ Carry-over of other food additives not listed shall be allowed provided they are approved by BFAD regulation and in accordance to Section 5.2 of the “Codex Principles Relating to the Carry-Over of Food Additives into Foods (CAC/Volume 1 1991)”.</li> </ul>
Contaminant	<ul style="list-style-type: none"> <li>■ Not specified</li> </ul>
Hygiene	<ul style="list-style-type: none"> <li>■ Prepared and handled in accordance to “ Codex Recommended International Code of Practice – General Principles of Food Hygiene” and/or “BFAD A.O. No. 153 s. 200 – Guidelines on the Current Good Manufacturing Practices in Manufacturing , Packing, Repacking or Holding Food” and processed according to the “Recommended Code of Practice for the Processing of Flour Sticks (Pancit Canton) (PNS 19:2008)”.</li> <li>■ When tested by appropriate methods of sampling and examination: <ul style="list-style-type: none"> <li>a) free from filth that may pose a hazard to health;</li> <li>b) free from parasites which may represent a hazard to health;</li> <li>c) not contain any substance originating from microorganisms in amounts which may represent a hazard to health; and</li> <li>d) free from spoilage or pathogenic microorganisms capable of survival and multiplication under normal storage conditions</li> </ul> </li> <li>■ The product shall be packed in suitable hygienic primary and secondary packages that will maintain its quality during storage and transport.</li> </ul>
Weight and Measures	<ul style="list-style-type: none"> <li>■ The average net weight of sample unit may exceed declared net weight; however, no individual package shall be &lt;95% of the declared net weight.</li> </ul>
Labelling	<ul style="list-style-type: none"> <li>■ Labelling of retail packages/container – each retail container shall be labelled and marked with the information according to BFAD Labelling Regulations and shall contain the following information: <ul style="list-style-type: none"> <li>a) The name of the product. The name of the product shall be “Flour Sticks” or “Pancit Canton”. The product may be called by other common names like: “Wheat Flour Sticks”, “Wheat Noodles”, “Wheat Flour Noodles”, “C(K)anton Noodles” or “Panc(s)it C(K)anton Noodles”, provided such name is accepted in the country of distribution.</li> <li>b) The Name and address of either the manufacturer, packer, distributor, importer, exporter or vendor of the food.</li> <li>c) The complete list of ingredients and food additives used in the preparation of the product in descending order of proportion.</li> </ul> </li> </ul>

	<p>d) The net content by weight in metric system. Other systems of measurement required by importing countries shall appear in parenthesis after metric system unit.</p> <p>e) The words “Best/Consume Before”/“Use by date”, indicating end of period at which the product shall retain its optimum quality attributes at define storage conditions.</p> <p>f) Lot identification marked in code identifying product lot.</p> <p>g) The words “Product of the Philippines” or similar expressions, or the country of origin if imported.</p> <p>h) Additional requirements – a pictorial representation of the product(s) on the label should not mislead the consumer with respect to the product so illustrated.</p> <ul style="list-style-type: none"> <li>■ Labelling of non-retail, bulk containers – The name of the product, lot identification code and the name and address of the manufacturer or packer shall appear in the container. However, the name and address of the manufacturer may be replaced by identification marks provided that such mark is clearly identified with accompanying documents.</li> <li>■ Nutrition labelling – Nutrition labelling shall conform to established regulations by the BFAD.</li> </ul>
Methods of Analysis and Sampling	<ul style="list-style-type: none"> <li>■ Method sampling – shall be in accordance with the FAO/WHO Codex Alimentarius Sampling Plans for Pre-packaged Foods (CAC/RM 42-1969)</li> <li>■ Determination of moisture – according to method of AOAC (2005, 18<sup>th</sup> edition) using the Oven Method</li> <li>■ Determination of free fatty acids (FFA) – according to the method of AOAC (2005, 18<sup>th</sup> edition) using the Titrimetric Method</li> <li>■ Determination of net weight</li> </ul>

<Methods of Analysis> Instant Noodles

Related legislation	Item	Specification	Analytical Methods	Reference
PNS/BFAD 18:2008 - Flour sticks (pancit canton)	Sampling	In accordance with FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (CAC/RM-1969)		
	Moisture content	<8%	Oven Method	AOAC (2005, 18 <sup>th</sup> Edition)
	Free fatty acids	< 0.5% (as oleic acid)	Titrimetric Method	AOAC (2005, 18 <sup>th</sup> Edition)
	Net weight	The average net weight of the sample unit may exceed the declared net weight, however, no individual package shall be less than 95% of the declared net weight.	PNS/BFAD 18:2008 Annex C	



**Table 3.5-19 Case Study 2 Carbonated Soft Drinks**

Standard Item	PNS/BFAD 11:2007
Name of the Standard	Citrus beverage products
Scope	<ul style="list-style-type: none"> <li>■ Philippine calamansi (<i>Microcarpa Bunge</i>) and dalandan (<i>Citrus aurantium</i>) beverages including ready-to-drink (RTD) beverages made from sound and mature calamansi or dalandan preserved exclusively by physical means. Preservation by physical means does not include ionizing radiation. Other citrus cultivars may also be used provided they conform to the standard stated herein.</li> </ul>
Description	<ul style="list-style-type: none"> <li>■ Carbonated drink (soda) – A ready-to-drink beverage prepared by mixing carbonated water and sweetening agent or agents with citrus sugar-concentrate or extract.</li> </ul>
Essential Composition and Quality Factor	<ul style="list-style-type: none"> <li>■ Basic Ingredients – Citrus: Calamansi or dalandan – fruit to be used shall be fresh, sound, clean and mature from any cultivated variety suitable to the characteristics of the fruits of <i>Microcarpa Bunge</i> or <i>Citrus aurantium</i> variety. Other cultivars of citrus may also be used.</li> <li>■ Potable water: Water fit for human consumption.</li> <li>■ Sweetening agent: One or more of the sugars, honey, high intensity sweeteners or artificial sweeteners.</li> <li>■ Other ingredients: Other food-grade ingredients may be added.</li> <li>■ General requirements – the citrus beverage product shall have the characteristic colour, aroma and flavour of the variety of citrus fruit from which it is made and shall be free from objectionable sensory characteristics.</li> <li>■ pH and titrable acidity – the pH of the extract for calamansi: &gt;2.0, dalandan: &gt;2.50; titrable acidity (as % citric acid) for calamansi: &gt;4.5%, dalandan: &gt;0.7%</li> <li>■ Soluble solids – the soluble solids content of the extract (exclusive of added sweetening agent/s) for calamansi: &gt;6.0% m/m, for dalandan: &gt;7.0% m/m, as determined by refractometer at 20°C, uncorrected for acidity and read as °Brix on the International Sucrose Scales.</li> <li>■ Sweetening agent – one or more of the sugars, honey, high intensity sweeteners and artificial sweeteners may be added in amounts according to regulations set by BFAD, the Codex Alimentarius Commission and/or authority for these products.</li> <li>■ Ethanol content – the ethanol content shall not exceed 3 g/kg.</li> <li>■ Volatile acids – traces of volatile acids may be present.</li> <li>■ Sensory properties – the product shall have the characteristic colour, aroma and flavour of the citrus fruit (calamansi or dalandan) used.</li> <li>■ Types of defects – Foreign matters: any matter, which has not been derived from the citrus fruit (calamansi or dalandan), does not pose a threat to human health and is readily recognized without magnification or is present at a level determined by magnification method or any equivalent methods that indicates non-compliance with good manufacturing practices and sanitation practices.</li> </ul>

	<ul style="list-style-type: none"> <li>■ Odour/flavour/colour: a sample unit affected by objectionable odours or flavours indicative of decomposition and unacceptable discolouration due to product deterioration.</li> </ul>
Food Additives	<ul style="list-style-type: none"> <li>■ In accordance to BFAD Bureau Circular No. 2006-016, the Codex Alimentarius Commission and/or authority for these products.</li> <li>■ Permitted food additives to be used: <ul style="list-style-type: none"> <li><u>Acid regulator</u> Citric acid; malic acid; calcium carbonate; adipates</li> <li><u>Anticaking agent</u> Calcium aluminium silicate (synthetic); microcrystalline cellulose; aluminium silicate; carnauba wax</li> <li>■ <u>Antioxidant</u> Ascorbic acid; calcium ascorbate; erythorbic acid; potassium ascorbate; sodium ascorbate; sodium erythroate</li> <li><u>Colour</u> Carotenoids; chlorophylls, copper complexes; curcumin; riboflavin; sunset yellow; tartrazine</li> <li><u>Preservatives</u> Benzoates; hydrobenzoates; sorbates; sulphites; carbon dioxide; phosphates; EDTA</li> <li><u>Processing aids</u> <ul style="list-style-type: none"> <li>a. Antifoaming agents – polydimethylsiloxane</li> <li>b. Clarifying agents/filtration aids/flocculating agents – adsorbent clays; adsorbent resins; activated carbon (only from plants); bentonite; cellulose; chitosan; colloidal silica; diatomaceous earth; gelatine (from skin collagen); ion exchange resins (cation and anion); kaolin; perlite; polyvinylpyrrolidone; rice hulls; silicasol; tannin</li> <li>c. Enzyme preparations – pectinases (for breakdown of pectin); proteinases (for breakdown of proteins); amylases (for breakdown of starch); cellulases (limited use to facilitate disruption of cell walls)</li> <li>d. Packing gas – nitrogen, carbon dioxide</li> </ul> </li> <li><u>Stabilizer/thickener</u> Calcium chloride; carob bean gum; carrageenan; gellan gum; guar gum; gum arabic; karaya gum; lactic and fatty acid esters of glycerol; pectins; potassium alginate; sodium alginate; tara gum; tragacanth gum; xanthan gum; agar; konjac flour; sodium carboxymethylcellulose</li> <li><u>Sweetener</u> Acesulfame potassium; aspartame; saccharin; sucralose</li> </ul> </li> </ul>
Contaminant	<ul style="list-style-type: none"> <li>■ Pesticide residues – amount of residue shall comply with those maximum residue limits for pesticides established by the Codex Alimentarius Commission and/or authority for these products.</li> <li>■ Heavy metal contamination – the citrus beverage products covered by the provisions of this standard shall comply with those maximum residue levels for heavy metal contamination established by the Codex Alimentarius Commission and/or authority for these products.</li> </ul>
Hygiene	<ul style="list-style-type: none"> <li>■ Prepared and handled in accordance with the appropriate sections of the “Codex Recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1 -1969, Rev. 4-2003)” and/or “BFAD A.O. No. 153</li> </ul>

	<p>s.2004 – Guidelines, Current Good Manufacturing Practices in Manufacturing, Packing, Repacking or Holding Food” and processed according to the “Recommended Code of Practice for the Processing and Handling of Citrus Beverage Products (PNS/BFAD 12:2007)”.</p> <ul style="list-style-type: none"> <li>■ When tested by appropriate methods of sampling and examination: <ul style="list-style-type: none"> <li>a) free from filth that may pose a hazard to health;</li> <li>b) free from parasites which may represent a hazard to health;</li> <li>c) not contain any substance originating from microorganisms in amounts which may represent a hazard to health;</li> <li>d) free from spoilage or pathogenic microorganisms capable of survival and multiplication under normal storage conditions; and</li> <li>e) free from container integrity defects which may compromise the hermetic seal</li> </ul> </li> </ul>
Weight and Measures	<ul style="list-style-type: none"> <li>■ Minimum fill – the citrus beverage product shall occupy not less than 90% of the water capacity of the container. The water capacity of the container is the volume of distilled water at 20°C, which the sealed container will hold when completely filled. A container that fails to meet the requirement for minimum fill (90% container capacity) shall be considered “slack filled”.</li> </ul>
Labelling	<ul style="list-style-type: none"> <li>■ Each container shall be labelled and marked with the following information in accordance with current BFAD’s Labelling Regulation: <ul style="list-style-type: none"> <li>a) The name of the product shall be “[Name of citrus fruit + Type of beverages product]” (ex. Calamansi Juice; Dalandan Juice Powder);</li> <li>b) Products using artificial sweetener/s shall have statement/s referring to its low and/or reduced caloric value and the possibility of hypersensitivity to some of its components;</li> <li>c) The complete list of ingredients and food additives used in the preparation of the products in descending order of proportion;</li> <li>d) The net quantity of content by weight in the metric system. Other systems of measurement required by importing countries shall appear in parenthesis after the metric system unit;</li> <li>e) The name and address of the manufacturer, packer and/or distributor of the food;</li> <li>f) Open date marking: The word “Best/Consume before”/“Use by date”, indicating end of period at which the product shall retain its optimum quality attributes at defined storage conditions;</li> <li>g) Lot or code number identifying product lot;</li> <li>h) The words “Product of the Philippines”, or the country of origin if imported;</li> <li>i) Additional requirements – A pictorial representation of fruit(s) on the label should not mislead the consumer with respect to the fruit so illustrated;</li> <li>j) Direction for use should be indicated in the label;</li> <li>k) Storage instructions – where the citrus beverage product requires to be kept under conditions of refrigeration, there shall be information for storage and, if necessary, thawing of the product. Where practicable, storage instructions should be in close proximity to the open date marking;</li> </ul> </li> <li>■ Nutrition labelling – nutrition labelling shall conform to established regulations of BFAD.</li> </ul>

Methods of Analysis and Sampling	<ul style="list-style-type: none"> <li>■ Measurement of pH – according to AOAC Official Methods of Analysis, Method No. 981.12, 16<sup>th</sup> ed., 1995.</li> <li>■ Determination of titrable acidity – According to AOAC Official methods of Analysis No. 942.15, 16<sup>th</sup> ed., 1995.</li> <li>■ Determination of total soluble solids – According to AOAC Official methods of Analysis No. 932.14C, 16<sup>th</sup> ed., 1995.</li> <li>■ Determination of alcohol in fruit products – According to AOAC Official methods of Analysis No. 920.150, 16<sup>th</sup> ed., 1995</li> <li>■ Method of sampling – Sampling shall be in accordance with the FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods – CAC/RM 42-1969, Codex Alimentarius Volume 13, 1994.</li> <li>■ Determination of lead using atomic absorption spectrophotometer – According to AOAC Official methods of Analysis No. 972.25, 16<sup>th</sup> ed., 1995.</li> <li>■ Determination of tin using atomic absorption spectrophotometer – According to AOAC Official methods of Analysis No. 985.16, 16<sup>th</sup> ed., 1995.</li> </ul>
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<Methods of Analysis> Carbonated Soft Drinks

Related legislation	Item	Specification	Analytical Methods	Reference
PNS/BFAD 11:2007 - Citrus beverage products	pH	pH of extract for calamansi: >2.0, dalandan: >2.50	AOAC Method No. 981.12	AOAC Official Methods of Analysis, 16 <sup>th</sup> Edition, 1995
	Titrable acidity	Titrable acidity (as % citric acid) for calamansi: >4.5%, dalandan: >0.7%	AOAC Method No. 942.15	AOAC Official Methods of Analysis, 16 <sup>th</sup> Edition, 1995
	Total soluble solids	Soluble solids of the extract (exclusive of added sweetening agents) for calamansi: >6.0% m/m, for dalandan: >7.0% m/m, as determined by refractometer at 20C, uncorrected for acidity and read as Degrees Brix on the International Sucrose Scales	AOAC Method No. 932.14C	AOAC Official Methods of Analysis, 16 <sup>th</sup> Edition, 1995
	Alcohol in fruit products	< 3g/kg	AOAC Method No. 920.150	AOAC Official Methods of Analysis, 16 <sup>th</sup> Edition, 1995
	Sampling	In accordance with FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (CAC/RM-1969)		
	Lead	According to maximum limits established by Codex Alimentarius Commission and/or authority for these products	AOAC Method No. 972.25	AOAC Official Methods of Analysis, 16 <sup>th</sup> Edition, 1995
	Tin	According to maximum limits established by Codex Alimentarius Commission and/or authority for these products	AOAC Method No. 985.16	AOAC Official Methods of Analysis, 16 <sup>th</sup> Edition, 1995

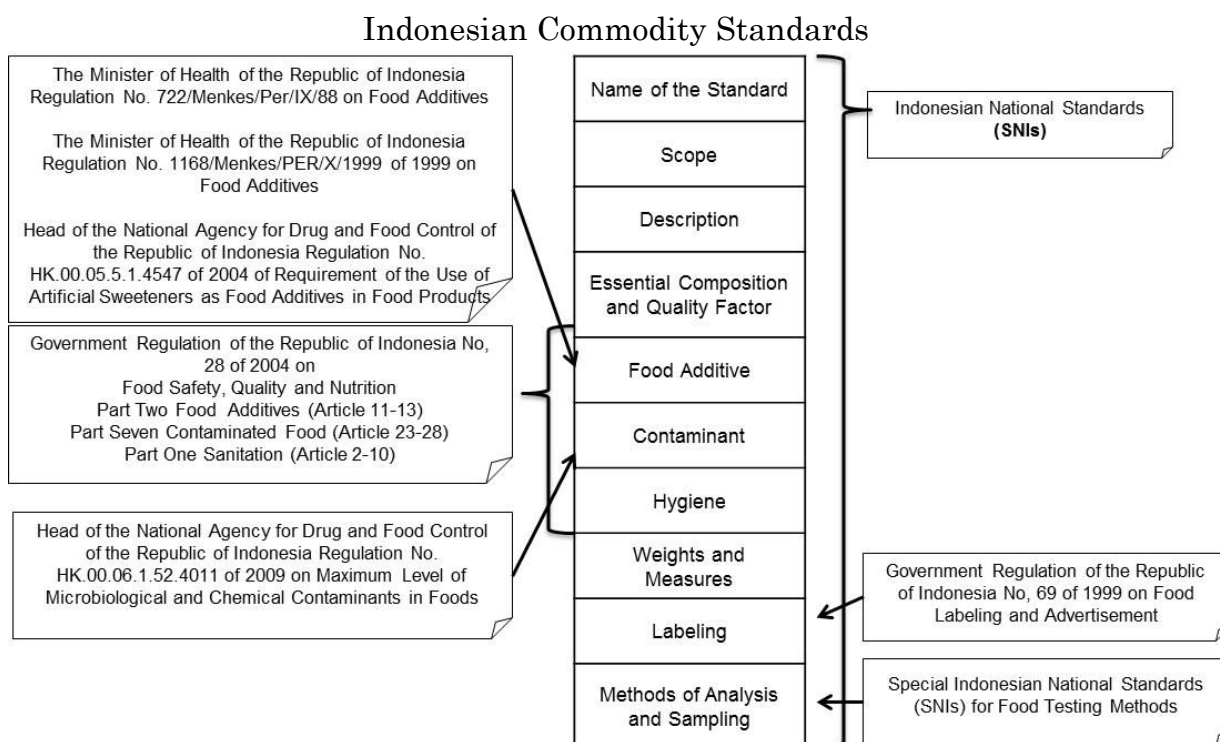
### 3.5.4 Indonesia

#### 3.5.4.1 Food Administration

In Indonesia, Ministry of Agriculture is responsible for agriculture, Ministry of Marine Affairs and Fishery for fishery, Ministry of Industry for industries, and Ministry of Health and National Agency for Drug and Food Control for health.

#### 3.5.4.2 Acts and Regulations related to Commodity Standards

Major acts and regulations related to Commodity Standards are presented in **Figure 3.5-4**.



**Figure 3.5-4 Indonesian Commodity Standards and Relevant Laws**

#### 3.5.4.3 Food Relevant Laws

##### (1) Act of the Republic of Indonesia No. 7 of 1996 on Food

In the year of 1996, the Government of Indonesia issued the Act of the Republic of Indonesia No. 7 of 1996 on Food. The definition of food in the Food Act further indicates its comprehensive coverage:

“Food is everything that originates from biological sources and from water, either processed or unprocessed, that is intended to be eaten or drunk by humans, including food additives, basic food materials and other materials used in the preparation, processing and/or manufacture of food

and drink.” The official amplification appended to the legislation states that the Food Act covers the following aspects:

- Technical criteria concerning food - covering safety, quality and nutrition as well as provisions for labeling and advertising foods.
- Responsibilities of those who produce, store, transport and/or distribute food, together with legal sanctions to enforce the determinations. (This aspect includes import and export of foods.)
- The role of government and society in achieving self-sufficiency in food and diversity in the foodstuffs consumed.
- The role of government in fostering a domestic food industry aiming to improve the characteristics of food for domestic consumption and for export.

## **(2) Government Regulation of the Republic Indonesia No. 69 of 1999 on Food Labeling and Advertisement**

Based on the Food Act as the main foundation in the development food-related regulations, in the year of 1999 the Government of Indonesia issued the Government Regulation of the Republic Indonesia No. 69 of 1999 on Food Labeling and Advertisement. Important statements in several articles are:

- (1) any persons producing or importing any packaged food into Indonesian territory to be traded shall be obliged to stick up label on and or in the food packaging;
- (2) labeling as mentioned in paragraph (1) shall be done in such way that it is not easy to stick off, not easy to lose its color or damaged, and shall lie on the part of the packaging which is easy to see and read;
- (3) any statements on the Label shall be written or printed by using Indonesian language, Arabic numbers and Latin letters;
- (4) the label as set forth in mentioned statement (2) shall contain any information on the food, at least :
  - a. Name of product;
  - b. List of ingredients;
  - c. Net weight or net contents;
  - d. Name and address of any party who produces or imports the food into Indonesian territory;
  - e. Date, month, and year of minimum durability.

### **(3) Government Regulation of the Republic of Indonesia No. 28 of 2004 on Food Safety, Quality and Nutrition**

Another government regulation that was developed under the umbrella of the Food Act is the Government Regulation of the Republic of Indonesia No. 28 of 2004 on Food Safety, Quality and Nutrition which was issued in 2004.

It is clearly stated in the Government Regulation No. 28/2004 on Food Safety, Quality and Nutrition, Article 2 that any person who is responsible for administering the activities on the food chain that includes food production, storage, transportation and distribution shall meet the sanitation requirements in compliance with the prevailing legislation. In Article 3 it is further stated that the sanitation requirements in all the food chain shall be met by applying good practices guidelines that include:

- (a) Good Agricultural Practices;
- (b) Good Fresh Food Production Practices;
- (c) Good Manufacturing Practices;
- (d) Good Food Distribution Practices;
- (e) Good Food Retail Practices; and
- (f) Good Ready-to-Serve Food Production Practices.

Sanitation requirements set in the regulation among others area:

- (a) Avoiding the use of land whose environment has the potential to threaten food safety;
- (b) Controlling the biological contamination, animal and plant diseases that threaten food safety;
- (c) Reducing to the minimum chemical residues in food as the consequence of using fertilizers, pest and disease control drugs, growth hormone and inappropriate animal drugs;
- (d) Killing or preventing the pathogenic microorganisms and reducing the number of other microorganisms in food; and
- (e) Controlling the process, among others by selecting the raw materials, using food additives, processing, packaging, storage and transportation.

#### **3.5.4.4 Indonesian National Standards**

In term of standards of food commodities, it is stated in Article 29 that the Head of the Agency who is responsible for the field of national standardization (National Standardization Agency of Indonesia) shall set forth the food quality standard, which is declared as the Indonesian National Standard, in accordance with the prevailing legislation.

Furthermore, it is stated in Article 30, paragraph 1 that the Indonesian National Standard as contemplated in Article 29 may be imposed compulsorily, taking into account the people’s security, safety and health or the environmental sustainability and/or that economic considerations shall meet certain quality standards. Paragraph 2 states the compulsory imposition of the Indonesian National Standard as contemplated in paragraph 1 shall be carried out by the Minister who is responsible for industry (Ministry of Industry), agriculture (Ministry of Agriculture), fishery (Ministry of Marine Affairs and Fishery) or the Head of the Agency (National Agency for Drug and Food Control) in accordance with their respective duties and authority in coordination with the Head of the agency who is responsible for national standardization. Paragraph 3 states any matters in connection with application and evaluation of the appropriateness of the Indonesian National Standard that is imposed compulsorily shall, as contemplated in paragraph 2, be carried out in accordance with the prevailing legislation. Paragraph 4 states any person who produces or distributes the types of food as contemplated in paragraph 1 shall meet the Indonesian National Standard in accordance with the prevailing legislation.

**Table 3.5-20 Format of Indonesian National Standard**

Name of the Standard
Scope
Normative Reference
Definition
Composition and Quality Requirements
Sampling Method
Testing Methods
Hygienic and Sanitation Practices
Packaging Method
Labelling Requirements
Appendices

The selected Indonesian National Standards (SNIs) for foods are listed in **Table 3.5-21**, and the selected Indonesian National Standards (SNIs) for Food Testing Methods in **Table 3.5-22**.

**Table 3.5-21 List of Selected Indonesian National Standards (SNIs) for Foods**

<b>Rice and Wheat Noodles</b>			
1	Instant Rice Noodle SNI 01-3742-1995	4	Dried Noodles SNI 01-2974-1996



2	Rice Noodle SNI 01-2975-2006	5	Noodles SNI 01-6630-2002
3	Wet Wheat Noodles SNI 01-2987-1992	6	Instant Noodle SNI 01-3551-2000
<b>Beverages</b>			
1	Energizer Drink SNI 01-6684-2002	7	Flavoured Fermented Milk Drink SNI 7552:2009
2	Squash Drinks SNI 01-2984-1998	8	Coffee Drinks in Package SNI 01-4314-1996
3	Isotonik Drink SNI 01-4452-1998	9	Traditional Drink Powder SNI 01-4320-1996
4	Nutritious Beverages for Pregnant and or Suckled Mothers SNI 01-7148-2005	10	Fruit Juice SNI 01-3719-1995
5	Packaged Tea Drinks SNI 01-3143-1992	11	Mango Fruit Juice SNI 7382:2009
6	Orange Flavour Drink SNI 01-3722-1995	12	Orange Flavoured Drink Powder SNI 01-3722-1995
<b>Frozen Seafoods</b>		<b>Meat</b>	
1	Frozen Scallop SNI 3230.1:2006	1	Quality of Beef Carcass and Meat SNI 3932:2008
2	Packed Frozen Steamed Crab SNI 3231.1:2010	2	Corned Beef SNI 1-3775-2006
3	Frozen Lobster SNI 3228.1:2010		
<b>Miscellaneous Products</b>			
1	Fish Cracker SNI 2713.1:2009	7	Canned Squid SNI 7317.1:2009
2	Prawn Crackers SNI 2714.1:2009	8	Coffee Powder SNI 01-3542-2004
3	Cooking Oil SNI 01-3741-2002	9	Maltodextrin SNI 7599:2010
4	Chilli Sauce SNI 01-2976-2006	10	Wheat Flour for Food SNI 3751:2009
5	Tomato Sauce SNI 01-3546-2004	11	Sago Starch Flour SNI 3729:2008
6	Fruit Jam SNI 3746:2008	12	White Sugar Crystal SNI 3140.3:2010

**Table 3.5-22 List of Selected Indonesian National Standards (SNIs) for Food Testing Methods**

<b>SNI 2897: 2008</b> <b>Testing methods for microbiological count in meat, egg, and milk, and their products</b>		Reference: <ul style="list-style-type: none"> <li>▪ USFDA. 2001, 2006. Bacteriological Analytical Manual. Division of Microbiology, US Food and Drug Administration, Gaithersburg, USA.</li> <li>▪ FAO. 1992. Manual of Food Quality Control. Microbiological Analysis, 4<sup>th</sup> ed., Food and Agriculture Organization, United Nations.</li> </ul>	
1	Total plate count (TPC)	5	<i>Salmonella spp.</i>
2	Coliform	6	<i>Campylobacter spp.</i>
3	<i>E.coli</i>	7	<i>Lysteria monocytogenes</i>
4	<i>Staphylococcus aureus</i>		
<b>SNI 01-2891-1992: Food testing methods</b>		<b>SNI 19-2896-1998: Metal contaminants testing method in foods</b> Reference: AOAC, 1995	

<p><b>SNI 01-2354.5-2006 Determination of Cadmium (Cd) in Fishery Products</b></p> <p>Reference:</p> <ul style="list-style-type: none"> <li>▪ Determination of Metals in Foods by Atomic Absorption Spectrophotometry after Dry Ashing: NMKL, Collaborative Study. Journal of AOAC International, Vol. 83, No. 5: pp 1201-1211</li> <li>AOAC. 2000. Official Methods of Analysis. 17<sup>th</sup> ed. Vol. 1, Chapter 9:pp 19-22</li> </ul>	<p><b>SNI 01-2354.7-2006 Determination of Lead (Pb) in Fishery Products</b></p> <p>Reference:</p> <ul style="list-style-type: none"> <li>▪ Determination of Metals in Foods by Atomic Absorption Spectrophotometry after Dry Ashing: NMKL, Collaborative Study. Journal of AOAC International, Vol. 83, No. 5: pp 1201-1211</li> <li>▪ AOAC. 2000. Official Methods of Analysis. 17<sup>th</sup> ed. Vol. 1, Chapter 9:pp 19-22</li> </ul>
<p><b>SNI 2354.10:2009 Determination of Histamin by Spectrofluorimetry and HPLC in Fishery Products</b></p> <p>Reference:</p> <ul style="list-style-type: none"> <li>▪ John.M. Tennyson and R. Steve. Winlers. 2000. Histamin in Seafood: Fluorimetric Method, Fish and Other Marine Products.</li> <li>▪ AOAC. 2000. Official Methods of Analysis. 17<sup>th</sup> ed. Vol 1, Chapter 35:pp 17-19</li> </ul>	<p><b>SNI 01-2332.1-2006 Determination of Coliform and E. coli in Fishery Products</b></p> <p>Reference:</p> <ul style="list-style-type: none"> <li>▪ AOAC. 2000. Official Methods of Analysis. 17<sup>th</sup> ed.</li> <li>▪ USFDA. 1998. Bacteriological Analytical Manual. 8<sup>th</sup> ed.</li> </ul> <p>Note: SNI 01-2332.2-2006 (Salmonella), SNI 01-2332.3-2006 (TPC), SNI 01-2332.4-2006 (<i>Vibrio cholerae</i>), SNI 01-2332.5-2006 (<i>Vibrio parahaemolyticus</i>), SNI 01-2332.6-2006 (<i>Worm parasite</i>), SNI 01-2332.7-2006 (mold and yeast)</p>
<p><b>SNI 01-4866-1998: Arsenic testing method in foods</b></p> <p>Reference: AOAC. 1995. Official Methods of Analysis.</p>	<p><b>SNI 01-2354.6-2006 Determination of Mercury (Hg) in Fishery Products</b></p> <p>Reference:</p> <ul style="list-style-type: none"> <li>▪ AOAC. 2000. Official Methods of Analysis. 17<sup>th</sup> ed. Vol. 1, Chapter 9:pp 36</li> </ul>

### 3.5.4.5 Methods of Analysis for General Foods

Methods of analysis for "General Foods" are shown in **Table 3.5-A4**. Methods of analysis for the food categories taken up in the Case Study are described in the charts under the tables for the standards for those food categories (**Tables 3.5-23, 3.5-24, and 3.5-25**), respectively.

### 3.5.4.6 Case Study

#### (1) Instant Noodles

Regarding the food standards, the standards for SNI 01-3551- 2000 are shown. As for the methods of analysis, items concerning microbiological and chemical contaminants and those concerning Instant Noodles (Mi Instan), Snack noodles (Mi makanan ringan), and Instant rice noodles (Bihun instan) are described (**Table 3.5-23**).

#### (2) Carbonated Soft Drinks

Regarding the food standards, the standards for energy drinks (SNI 01-6684-2002) are shown. As for the methods of analysis, items concerning microbiological and chemical contaminants and those concerning Soda

water (Air soda), Soda (Limun), Diabetic diet soda (Limun diet diabetes), and Energy drinks (Minimum energy) are described (**Table 3.5-24**).

### **(3) Prepared Frozen Foods**

Regarding the food standards, the standards for frozen scallops (SNI 3230.1:2010) are shown. As for the methods of analysis, items concerning microbiological and chemical contaminants and those concerning Frozen breaded shrimps and Chicken nuggets are described (**Table 3.5-25**).

**Table 3.5-A4 Methods of Analysis on General Foods**

Related legislation	Item	Specification	Analytical Methods	Reference
Head of the National Agency for Drug and Food Control of the Republic of Indonesia Regulation No. HK.00.06.1.52.4011 of 2009 on Maximum Level of Microbiological and Chemical Contaminants in Food	Microbiological contaminants	As specified in Regulation No. HK.00.06.1.52.4011 of 2009	SNI 01-2891-1992 Analytical Methods for Food and Beverages; SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	Metal contaminants	As specified in Regulation No. HK.00.06.1.52.4011 of 2009	SNI 01-2896-1998 Analytical Methods for Metal Contaminants; SNI 01-4866-1998 Analytical Methods for Arsenic	
	Other chemical contaminants	As specified in Regulation No. HK.00.06.1.52.4011 of 2009	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
Joint Decision of Ministry of Health and Ministry of Agriculture No. 881/MENKES/SKB/VIII/1996 on Maximum Residue Limits for Agricultural Products	MRLs for pesticide residues	As specified in Joint Decision No. 881/MENKES/SKB/VIII/1996	Analytical Methods as determined by the Pesticide Commission of the Department of Agriculture, AOAC Methods, and international methods.	
SNI 7313:2008 Maximum Residue Limits for Agricultural Products	MRLs for pesticide residues	As specified in SNI 7313:2008	Analytical Methods as determined by the Pesticide Commission of the Department of Agriculture, AOAC Methods, and international methods.	

**Table 3.5-23 Case Study 1 Instant Noodles**

	<b>SNI 01-3551- 2000</b>
Name of the Standard	Instant Noodle
Scope	This standard covers definition, composition and quality requirements, sampling, testing method, hygiene, packaging method and labelling of instant noodle.
Description	<p>Instant noodle is made from a dough of wheat or rice or other flour as main ingredient with or without addition of other materials. It can be treated with alkaline. Pregelatinization process is done before the noodle is dried by frying process or other dehydration process.</p> <p>Note 1 The above definition consists of “mi” (noodle from wheat flour), “bihun” (from rice and sago), “sohun” (from mung bean and or sago) and “kwetiau” (from rice and or wheat flour).</p> <p>Note 2 Instant is indicated by the presence of added spices and it needs a rehydration process to become ready for consumption.</p>
Essential Composition and Quality Factor	<p>Composition</p> <p>Main Raw Materials</p> <ol style="list-style-type: none"> <li>1. Wheat flour, rice flour or other flour.</li> <li>2. Water</li> </ol> <p>SNI 01-3751-2000: Wheat flour for foods</p> <p>Other ingredients which can be added</p> <ol style="list-style-type: none"> <li>1. Starch and other flour</li> <li>2. Salt</li> <li>3. Hydrocolloids</li> <li>4. Sugar and its derivatives</li> <li>5. Fats and oils</li> <li>6. Permitted food additives</li> <li>7. Permitted flavouring agents</li> <li>8. Spices and spices products</li> <li>9. Egg and egg products</li> <li>10. Livestock, poultry, fish and their products</li> <li>11. Milk and milk products</li> <li>12. Vegetable and vegetable products</li> </ol>

13. Fruit and fruit products  
14. Vitamin and mineral

SNI 01-3556-1999: Kitchen salt

Quality Requirements

No.	Testing Criteria	Unit	Requirements
1	Conditions		
1.1	Texture		normal/acceptable
1.2	Aroma		normal/acceptable
1.3	Taste		normal/acceptable
1.4	Colour		normal/acceptable
2	Foreign materials		None
3	Integrity	% w/w	Min 90
4	Moisture content		
4.1	Frying process	% w/w	Max. 10.0
4.2	Drying process	% w/w	Max. 14.5
5	Protein content		
5.1	Noodle from wheat flour	% w/w	Min. 8.0
5.2	Noodle from flour other than wheat flour	% w/w	Min. 4.0
6	Acid value	mg KOH/g of oil	Max. 2.0
7	Metal contaminants		
7.1	Lead (Pb)	mg/kg	Max. 2.0
7.2	Mercury (Hg)	mg/kg	Max. 0.05
8	Arsen (As)	mg/kg	Max. 0.5
9	Microbiological contaminants		
9.1	Total Plate Counts	colony/g	Max 1.0 x 10 <sup>6</sup>
9.2	<i>E. coli</i>	MPN/g	<3
9.3	Salmonella	-	Negative in 25 g
9.4	Molds	colony/g	Max 1.0 x 10 <sup>3</sup>

Food Additives	The Minister of Health of the Republic of Indonesia Regulation No. 722/Menkes/Per/IX/88 on Food Additives The Minister of Health of the Republic of Indonesia Regulation No. 1168/MenKes/PER/X/1999 of 1999 on Food Additives
Contaminant	Head of the National Agency for Drug and Food Control of the Republic of Indonesia Regulation No. HK.00.06.1.52. 4011 of 2009 on Maximum Level of Microbiological and Chemical Contaminants in Foods
Hygiene	Government Regulation of the Republic of Indonesia No. 28 of 2004 on Food Safety, Quality and Nutrition, Part One Sanitation (Article 2-10)

Weights and Measures	Government Regulation of the Republic of Indonesia No. 69 of 1999 on Food Labelling and Advertisement
Labelling	<p>Government Regulation of the Republic of Indonesia No. 69 of 1999 on Food Labelling and Advertisement</p> <p>The Head of the National Agency for Drug and Food Control of the Republic of Indonesia Decree No. HK.00.05.52.6291 of 2007 on Nutrition Labelling Reference for Food Products</p> <p>The Head of the National Agency for Drug and Food Control of the Republic of Indonesia Regulation No. HK.00.06.51. 0475 of 2005 on Guideline for Putting Information of Nutrient Value on the Label</p>
Methods of Analysis and Sampling	<p>Sampling Method Sampling in accordance with CAC/RM 42-1969, the FAOMWHO Codex Alimentarius Sampling Plans for Prepackaged Foods (AQL-6.5)</p> <p>Methods of Analysis AOCS official method Cd.3d.63-1993 : Determination of acid value. SNI 01-2891-1992: Food testing methods (conditions, moisture, protein, foreign matters) SNI 19-2896-1998: Metal contaminants testing method in foods SNI 19-2897-1992: Microbiological contaminants testing methods SNI 01-4866-1998 : Arsenic testing method in foods</p>

<Methods of Analysis> Instant Noodles

Related legislation	Item	Specification	Analytical Methods	Reference
Head of the National Agency for Drug and Food Control of the Republic of Indonesia Regulation No. HK.00.06.1.52.4011 of 2009 on Maximum Level of Microbiological and Chemical Contaminants in Food	Total Plate Count	< 1 x 10 <sup>6</sup> cfu/g, 30°C for 72h	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	Coliforms	< 100 cfu/g	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	<i>Staphylococcus aureus</i>	< 1 x 10 <sup>3</sup> cfu/g	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	<i>Bacillus cereus</i>	< 1 x 10 <sup>3</sup> cfu/g	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	Yeast & Moulds	< 1 x 10 <sup>4</sup> cfu/g	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	<i>Escherichia coli</i>	< 1 x 10 <sup>4</sup> cfu/g	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	Deoxynivalenol	750 ppb or mcg/kg	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
SNI 01-3551-2000 Instant Noodles (Mi Instan)	Quality characteristics for texture, aroma, taste and colour	Normal/acceptable	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Foreign matter	Not present	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Integrity	Min. 90% W/W	SNI 01-3551-2000 Item 6.1.2	
	Moisture content	Using frying process: 10.0% w/w; Using drying process: 14.5% w/w	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Protein content	Wheat noodles: Min 8.0% w/w; Other noodles: Min 4.0% w/w	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Acid value	Max 2.0 mg KOH/g oil	AOCS Official Method Cd 3d-63, 1993. Determination of acid value.	
	Metal contaminants	Lead: < 2.0 mg/kg; Mercury: <0.05 mg/kg	SNI 01-2896-1998 Analytical Methods for Metal Contaminants	
	Arsenic	< 0.5 mg/kg	SNI 01-4866-1998 Analytical Methods for Arsenic	



	Microbiological contaminants	Total Plate Count: <math>1.0 \times 10^6</math> cfu/g; <i>E. coli</i> : <math>3</math> MPN/g; Salmonella: absent per 25g; Moulds: <math>1.0 \times 10^3</math> cfu/g	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	Sampling	In accordance with FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (CAC/RM-1969)		
SNI 01-6630-2002 Snack noodles (Mi makanan ringan)	Quality characteristics for texture, aroma, taste and colour	Normal/acceptable	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Foreign matter	Not present	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Moisture content	Max 7.0% W/W	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Protein content	Min 5.0% W/W	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Acid value	Max 2.0 mg KOH/g oil	SNI 01-6630-2002 Item 6.6	
	Borax	Negative	SNI 01-2358-1991 Determination of borax content in food	
	Prohibited food additives	Negative as described in Minister of Health of the Republic of Indonesia Regulation No. 722/Menkes/Per/IX/88 on Food Additives and Regulation No. 1168/Menkes/PER/X/1999 on Food Additives	SNI 01-2895-1992 Analytical Methods for Colour Additives; SNI 01-2894-1992 Analytical Methods for Food Additives/Preservatives	
	Metal contaminants	Lead: <math>1.0</math> mg/kg; Copper: <math>10.0</math> mg/kg; Zinc: <math>40.0</math> mg/kg; Mercury: <math>0.05</math> mg/kg	SNI 01-2896-1998 Analytical Methods for Metal Contaminants	
	Arsenic	<math>0.5</math> mg/kg	SNI 01-4866-1998 Analytical Methods for Arsenic	
	Microbiological contaminants	Total Plate Count: <math>1.0 \times 10^4</math> cfu/g; <i>E. coli</i> : <math>3</math> MPN/g; Salmonella: absent per 25g; Moulds: <math>1.0 \times 10^3</math> cfu/g	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	

SNI 01-3742-1995 Instant rice noodles (Bihun instan)	Quality characteristics for texture, aroma, taste and colour	Normal/acceptable	SNI 01-2891-1992 Analytical Methods for Food and Beverages
	Foreign matter	Not present	SNI 01-2891-1992 Analytical Methods for Food and Beverages
	Integrity	Min. 90% W/W	SNI 01-3742-1995 Item 5.4
	Cooking time	Max 3 minutes (bihun : water is 1:5)	SNI 01-3742-1995 Item 5.5
	Moisture content	Max 11.0% W/W	SNI 01-2891-1992 Analytical Methods for Food and Beverages
	Ash content (without salt)	Max 2% W/W	SNI 01-3742-1995 Item 5.7
	Protein content	Min 6% W/W (N x 6.25)	SNI 01-2891-1992 Analytical Methods for Food and Beverages
	Acid value	Max 3 mg KOH/100g sample	SNI 01 - 3555 - 1994 Analytical Methods for Fats & Oils
	Metal contaminants	Lead: < 1.0 mg/kg; Copper: <10.0 mg/kg; Zinc: < 40.0 mg/kg; Mercury: <0.05 mg/kg	SNI 01-2896-1998 Analytical Methods for Metal Contaminants
	Arsenic	< 0.5 mg/kg	SNI 01-4866-1998 Analytical Methods for Arsenic
	Microbiological contaminants	Total Plate Count: < 1.0 x 10 <sup>6</sup> cfu/g; <i>E. coli</i> : < 3 MPN/g; Moulds: < 1.0 x 10 <sup>3</sup> cfu/g	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants
	Sampling	In accordance with FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (CAC/RM-1969)	
	Prohibited food additives	Negative as described in Minister of Health of the Republic of Indonesia Regulation No. 722/Menkes/Per/IX/88 on Food Additives and Regulation No. 1168/Menkes/PER/X/1999 on Food Additives	SNI 01-2895-1992 Analytical Methods for Colour Additives; SNI 01-2894-1992 Analytical Methods for Food Additives/Preservatives

**Table 3.5-24 Case Study 2 Energy Drinks**

<b>SNI 01-6684-2002</b>																																																																																																					
Name of the Standard	Energy Drinks																																																																																																				
Scope	This standard covers reference, definition, requirements, sampling, testing methods, labelling and packaging for energy drinks																																																																																																				
Description	Energy drink is a drink which contains one or more substances easily absorbed by the human body to produce energy with or without permitted food additives Note: Energy drink is not a food supplement																																																																																																				
Essential Composition and Quality Factor	<p>Quality Requirements</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Testing Criteria</th> <th>Unit</th> <th>Requirements</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Conditions</td> <td></td> <td></td> </tr> <tr> <td>1.1</td> <td>Appearance</td> <td></td> <td>transparent</td> </tr> <tr> <td>1.2</td> <td>Aroma</td> <td></td> <td>normal/specific</td> </tr> <tr> <td>1.3</td> <td>Taste</td> <td></td> <td>normal/ specific</td> </tr> <tr> <td>2</td> <td>pH</td> <td></td> <td>2.5 – 4.0</td> </tr> <tr> <td>3</td> <td>Total energy</td> <td>Kcal/portion</td> <td>Min. 100</td> </tr> <tr> <td>4</td> <td>Total sugar (as saccharose)</td> <td>% w/w</td> <td>Min. 12.5</td> </tr> <tr> <td>5</td> <td>Reducing sugar</td> <td>% w/w</td> <td>Min. 7</td> </tr> <tr> <td>6</td> <td>Taurine</td> <td>mg/portion</td> <td>Max. 1000</td> </tr> <tr> <td>7</td> <td>Caffeine</td> <td>mg/portion</td> <td>Max. 50</td> </tr> <tr> <td>8</td> <td>Food Additives</td> <td></td> <td></td> </tr> <tr> <td>8.1</td> <td>Artificial sweeteners</td> <td></td> <td>as SNI 01-0222-1995</td> </tr> <tr> <td>8.2</td> <td>Preservatives</td> <td></td> <td>as SNI 01-0222-1995</td> </tr> <tr> <td>8.3</td> <td>Colouring</td> <td></td> <td>as SNI 01-0222-1995</td> </tr> <tr> <td>9</td> <td>Metal contaminants</td> <td></td> <td></td> </tr> <tr> <td>9.1</td> <td>Lead (Pb)</td> <td>mg/kg</td> <td>Max. 0.2</td> </tr> <tr> <td>9.2</td> <td>Copper (Cu)</td> <td>mg/kg</td> <td>Max. 2.0</td> </tr> <tr> <td>9.3</td> <td>Zinc (Zn)</td> <td>mg/kg</td> <td>Max. 5.0</td> </tr> <tr> <td>9.4</td> <td>Tin (Sn)</td> <td></td> <td>Max. 40/250.0*</td> </tr> <tr> <td>10</td> <td>Arsen contaminant (As)</td> <td>Mg/kg</td> <td>Max. 0.1</td> </tr> <tr> <td>11</td> <td>Microbiological contaminants</td> <td></td> <td></td> </tr> <tr> <td>11.1</td> <td>Total Plate Counts</td> <td>colony/ml</td> <td>Max 2.0 x 10<sup>2</sup></td> </tr> <tr> <td>11.2</td> <td>Coliform</td> <td>MPN/ml</td> <td>Max. 20</td> </tr> <tr> <td>11.3</td> <td><i>E. coli</i></td> <td>MPN/ml</td> <td>&lt;3</td> </tr> </tbody> </table>	No.	Testing Criteria	Unit	Requirements	1	Conditions			1.1	Appearance		transparent	1.2	Aroma		normal/specific	1.3	Taste		normal/ specific	2	pH		2.5 – 4.0	3	Total energy	Kcal/portion	Min. 100	4	Total sugar (as saccharose)	% w/w	Min. 12.5	5	Reducing sugar	% w/w	Min. 7	6	Taurine	mg/portion	Max. 1000	7	Caffeine	mg/portion	Max. 50	8	Food Additives			8.1	Artificial sweeteners		as SNI 01-0222-1995	8.2	Preservatives		as SNI 01-0222-1995	8.3	Colouring		as SNI 01-0222-1995	9	Metal contaminants			9.1	Lead (Pb)	mg/kg	Max. 0.2	9.2	Copper (Cu)	mg/kg	Max. 2.0	9.3	Zinc (Zn)	mg/kg	Max. 5.0	9.4	Tin (Sn)		Max. 40/250.0*	10	Arsen contaminant (As)	Mg/kg	Max. 0.1	11	Microbiological contaminants			11.1	Total Plate Counts	colony/ml	Max 2.0 x 10 <sup>2</sup>	11.2	Coliform	MPN/ml	Max. 20	11.3	<i>E. coli</i>	MPN/ml	<3
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	No.	Testing Criteria	Unit	Requirements
	11.4	Salmonella	/25 ml	negative
	11.5	Staphylococcus aureus	colony/ml	0
	11.6	Vibrio sp.	/ml	negative
	11.7	Molds	colony/ml	Max 50
	11.8	Yeast	colony/ml	Max 50
		*packaged in can		
Food Additives	The Minister of Health of the Republic of Indonesia Regulation No. 722/Menkes/Per/IX/88 on Food Additives The Minister of Health of the Republic of Indonesia Regulation No. 1168/MenKes/PER/X/1999 of 1999 on Food Additives			
Contaminant	Head of the National Agency for Drug and Food Control of the Republic of Indonesia Regulation No. HK.00.06.1.52.4011 of 2009 on Maximum Level of Microbiological and Chemical Contaminants in Foods			
Hygiene	Government Regulation of the Republic of Indonesia No. 28 of 2004 on Food Safety, Quality and Nutrition, Part One Sanitation (Article 2-10)			
Weights and Measures	Government Regulation of the Republic of Indonesia No. 69 of 1999 on Food Labelling and Advertisement			
Labelling	Government Regulation of the Republic of Indonesia No. 69 of 1999 on Food Labelling and Advertisement  The Head of the National Agency for Drug and Food Control of the Republic of Indonesia Decree No. HK.00.05.52.6291 of 2007 on Nutrition Labelling Reference for Food Products  The Head of the National Agency for Drug and Food Control of the Republic of Indonesia Regulation No. HK.00.06.51.0475 of 2005 on Guideline for Putting Information of Nutrient Value on the Label			
Methods of Analysis and Sampling	<p>Sampling Method</p> <p>Sampling in accordance with SNI 19-0428-1993: Guideline for sampling of solid material</p> <p>Methods of Analysis</p> <p>Sample preparation as in SNI 01-2891-1992: Food testing methods, point 4.4</p> <p>Testing of conditions as in SNI 01-2891-1992: Food testing methods, point 1.2</p> <p>Testing of pH as in SNI 01-2891-1992: Food testing methods, point 16</p> <p>Testing of moisture, ash, protein, carbohydrate as in SNI 01-2891-1992: Food testing methods</p> <p>Testing of total sugar as in SNI 01-2891-1992: Food testing methods, point 3.1</p> <p>Testing of reducing sugar as in SNI 01-2891-1992: Food testing methods, point 2.1</p> <p>Testing of taurine as in AOAC Official Method 997.05. – 1999 (Annex A)</p> <p>Tasting of caffeine as in AOAC Official Method 962.13.- 1999. (Annex B))</p> <p>Testing of artificial sweeteners as in SNI 01-2831-1992: Artificial sweetener testing methods. If saccharin positive, continued with AOAC Official Method 934.04 - 1999. (Annex C.1)</p> <p>Testing of sorbitol as in AOAC Official Method 973.28 - 1999. ( Annex C.3)</p> <p>Testing of preservative as in SNI 01-2894-1992: Preservative testing method</p>			

<p>Testing of colouring as in SNI 01-2895-1992: Colouring testing method</p> <p>Testing of metal contaminants as in SNI 01-2896-1998: Testing method of metal contaminants in foods</p> <p>Testing of arsenic as in SNI 01-4866-1998: Testing method of arsenic in foods</p> <p>Testing of microbe as in SNI 01-2897-1992: Testing method of microbiological contaminants</p>
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<Methods of Analysis> Carbonated Soft Drinks

Related legislation	Item	Specification	Analytical Methods	Reference
Head of the National Agency for Drug and Food Control of the Republic of Indonesia Regulation No. HK.00.06.1.52.4011 of 2009 on Maximum Level of Microbiological and Chemical Contaminants in Food	Microbiological contaminants	Total Plate Count: <math>< 1.0 \times 10^2</math> cfu/ml; Coliforms: <math>< 1</math> cfu/100ml; <i>Salmonella sp.</i> : absent per 100ml; <i>Staphylococcus aureus</i> : absent per ml; Yeast & moulds: <math>< 1.0 \times 10^2</math> cfu/ml	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	Metal contaminants	Arsenic: <math>< 0.1</math> ppm; Tin: <math>< 150.0</math> ppm; Lead: <math>< 0.2</math> ppm	SNI 01-2896-1998 Analytical Methods for Metal Contaminants; SNI 01-4866-1998 Analytical Methods for Arsenic	
SNI 01-3708-1995 Soda water (Air soda)	Quality characteristics for appearance, aroma and taste	Appearance: clear/colourless; Aroma: odourless; Taste: normal	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Carbon dioxide	3-5 atm (CO <sub>2</sub> , 27°C)	SNI 01-3708-1995 Item 5.3	
	Dissolved solids	Max 500 mg/kg	SNI 01-3708-1995 Item 5.4	
	Food additives	Prohibited, except for mineral salts, as per SNI 01-0222-1987 Food Additives	SNI 01-2895-1992 Analytical Methods for Colour Additives; SNI 01-2894-1992 Analytical Methods for Food Additives/Preservatives; SNI 01-3708-1995 Item 5.8 Determining mineral salts as sodium (Na)	
	Metal contaminants	Lead: <math>< 0.2</math> mg/kg; Copper: <math>< 2.0</math> mg/kg; Zinc: <math>< 5.0</math> mg/kg; Mercury: <math>< 0.03</math> mg/kg; Tin: 40.0, 250.0 (if packaged in can)	SNI 01-2896-1998 Analytical Methods for Metal Contaminants;	
	Arsenic	<math>< 0.1</math> mg/kg	SNI 01-4866-1998 Analytical Methods for Arsenic	

	Microbiological contaminants	Total Plate Count: < 2.0 x 10 <sup>2</sup> cfu/ml; coliforms: < 20 MPN/ml; E. coli: < 3 MPN/ml; <i>Salmonella sp.</i> : absent per 100ml; <i>Staphylococcus aureus</i> : 0 cfu/ml; <i>Vibrio sp.</i> : Absent per 100ml; <i>Clostridium perfringens</i> : Absent per 100ml; Yeast & moulds: < 50 cfu/ml;	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	Sampling	As specified in SNI 19-0429-89 Sampling Guidelines for Liquid and Semi-solid Food Products		
SNI 01-2972-1998 Soda (Limun)	Quality characteristics for aroma, taste and colour	Normal	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Sugar content	6-15% W/W (as sucrose)	SNI 01-2892-1992 Analytical Method for Sugars	
	Saccharine & cyclamate	Prohibited	SNI 01-2895-1992 Analytical Methods for Artificial Sweeteners	
	Colour additives	As per SNI 01-0222-1995	SNI 01-2895-1992 Analytical Methods for Colour Additives	
	Preservatives	As per SNI 01-0222-1995	SNI 01-2894-1992 Analytical Methods for Food Additives/Preservatives	
	Carbon dioxide pressure	20-70 psi (at temp. range: 27-30°C)	SNI 01-2972-1998 Item 6.2	
	Metal contaminants	Lead: < 0.2 mg/kg; Copper: < 2.0 mg/kg; Zinc: < 5.0 mg/kg; Tin: 40.0, 250.0 (if packaged in can)	SNI 01-2896-1998 Analytical Methods for Metal Contaminants;	
	Arsenic	< 0.1 mg/kg	SNI 01-4866-1998 Analytical Methods for Arsenic	
	Microbiological contaminants	Total Plate Count: < 2.0 x 10 <sup>2</sup> cfu/ml; Coliforms: < 20 MPN/ml; E. coli: < 3 MPN/ml; <i>Salmonella sp.</i> : absent per 25ml; <i>Staphylococcus aureus</i> : 0 cfu/ml; <i>Vibrio sp.</i> : Absent per 25ml; <i>Clostridium perfringens</i> : Absent per 100ml; Yeast & moulds: < 50 cfu/ml;	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	

	Sampling	As specified in SNI 19-0429-89 Sampling Guidelines for Liquid and Semi-solid Food Products		
SNI 01-3699-1995 Diabetic diet soda (Limun diet diabetes)	Quality characteristics for aroma, taste and texture	Normal	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Glucose content	Max 0.10% W/W	SNI 01-2892-1992 Analytical Method for Sugars	
	Total energy	As specified on the label	SNI 01-3699-1995 Item 5.3	
	Carbon dioxide pressure	Max 70 psi (27-30°C)	SNI 01-3699-1995 Item 5.4	
	Food additives (Artificial sweeteners, colour additives & preservatives)	As per SNI 01-0222-1987 and its revisions	SNI 01-2895-1992 Analytical Methods for Artificial Sweeteners; SNI 01-2895-1992 Analytical Methods for Colour Additives; SNI 01-2894-1992 Analytical Methods for Food Additives/Preservatives	
	Metal contaminants	Lead: < 0.2 mg/kg; Copper: < 2.0 mg/kg; Zinc: < 5.0 mg/kg; Tin: 40.0, 250.0 (if packaged in can)	SNI 01-2896-1998 Analytical Methods for Metal Contaminants;	
	Arsenic	< 0.1 mg/kg	SNI 01-4866-1998 Analytical Methods for Arsenic	
	Microbiological contaminants	Total Plate Count: < 2.0 x 10 <sup>2</sup> cfu/ml; Coliforms: < 20 MPN/ml; E. coli: < 3 /ml; Salmonella: negative; <i>Staphylococcus aureus</i> : 0 cfu/ml; <i>Vibrio</i> sp.: negative; Yeast & Moulds: < 50 cfu/ml	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	Sampling	As specified in SNI 19-0429-89 Sampling Guidelines for Liquids and Semi-solid Food Products		
SNI 01-6684-2002 Energy drinks (Minimum energy)	Quality characteristics for appearance, aroma and taste	Appearance: clear/colourless; Aroma: normal/typical; Taste: normal/typical	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	pH	2.5 - 4.0	SNI 01-2891-1992 Analytical Methods for Food and Beverages	

	Total energy	Min 100 Kkal/serving	SNI 01-6684-2002 Item 6.4	
	Total sugar	Min 12.5 % W/W (as sucrose)	SNI 01-2892-1992 Analytical Method for Sugars	
	Reducing sugars	Min 7.0% W/W	SNI 01-2892-1992 Analytical Method for Sugars	
	Taurin	Max 1,000 mg/serving	AOAC Official Method 997.05 - 1999	
	Caffeine	Max 50 mg/serving	AOAC Official Method 962.13 - 1999	
	Food additives (Artificial sweeteners, colour additives & preservatives)	As specified in SNI 01-0222-1995	SNI 01-2895-1992 Analytical Methods for Artificial Sweeteners (if saccharine positive, then apply AOAC Official Method 934.04 - 1999; If cyclamate positive, then apply AOAC Official Method 957.10 - 1999; If Sorbitol positive, then apply AOAC Official Method 973.28 - 1999); SNI 01-2895-1992 Analytical Methods for Colour Additives; SNI 01-2894-1992 Analytical Methods for Food Additives/Preservatives	
	Metal contaminants	Lead: < 0.2 mg/kg; Copper: < 2.0 mg/kg; Zinc: < 5.0 mg/kg; Tin: 40.0, 250.0 (if packaged in can)	SNI 01-2896-1998 Analytical Methods for Metal Contaminants;	
	Arsenic	< 0.1 mg/kg	SNI 01-4866-1998 Analytical Methods for Arsenic	
	Microbiological contaminants	Total Plate Count: < 2.0 x 10 <sup>2</sup> cfu/ml; Coliforms: < 20 MPN/ml; E. coli: < 3 MPN/ml; Salmonella: negative; <i>Staphylococcus aureus</i> : 0 cfu/ml; <i>Vibrio</i> sp.: negative; Yeast & Moulds: < 50 cfu/ml	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	Sampling	As specified in SNI 19-0429-89 Sampling Guidelines for Liquid and Semi-solid Food Products		



**Table 3.5-25 Case Study 3 Frozen Scallop**

<b>SNI 3230.1:2010</b>																																																																					
Name of the Standard	Frozen Scallop																																																																				
Scope	This standard determines specifications which cover hygienic and sanitation technique, food quality and safety requirements of frozen fresh Scallop ( <i>Amusium pleuronectes</i> )																																																																				
Description	Frozen Scallop is a fishery product obtained from live Scallop as raw material which is handled, processed and frozen.																																																																				
Essential Composition and Quality Factor	<p>Raw Materials and Processing Aids In accordance with SNI 3230.2:2010 (fresh Scallop) and SNI 3230.3:2010 (processing aids)</p> <p>Quality Requirements</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">No.</th> <th style="width: 45%;">Testing Criteria</th> <th style="width: 20%;">Unit</th> <th style="width: 30%;">Requirements</th> </tr> </thead> <tbody> <tr> <td>a.</td> <td>Organoleptic</td> <td>Value (1-9)</td> <td>Min. 7</td> </tr> <tr> <td>b.</td> <td>Microbiological Contaminants</td> <td></td> <td></td> </tr> <tr> <td></td> <td>• Total Plate Count</td> <td>colony/g</td> <td>Max. <math>5.0 \times 10^5</math></td> </tr> <tr> <td></td> <td>• <i>Escherichia coli</i></td> <td>MPN/g</td> <td>&lt;3</td> </tr> <tr> <td></td> <td>• Salmonella</td> <td>per 25 g</td> <td>Negative</td> </tr> <tr> <td></td> <td>• <i>Vibrio cholerae</i></td> <td>per 25 g</td> <td>Negative</td> </tr> <tr> <td></td> <td>• <i>Staphylococcus aureus</i></td> <td>colony/g</td> <td>Max. <math>1.0 \times 10^3</math></td> </tr> <tr> <td>c.</td> <td>Chemical Contaminants*</td> <td></td> <td></td> </tr> <tr> <td></td> <td>• Cadmium (Cd)</td> <td>mg/kg</td> <td>Max. 1.0</td> </tr> <tr> <td></td> <td>• Mercury (Hg)</td> <td>mg/kg</td> <td>Max. 0.5</td> </tr> <tr> <td></td> <td>• Lead (Pb)</td> <td>mg/kg</td> <td>Max. 1.0</td> </tr> <tr> <td>d.</td> <td>Biotoxine*</td> <td></td> <td></td> </tr> <tr> <td></td> <td>• PSP</td> <td>□g/kg</td> <td>Max. 800</td> </tr> <tr> <td></td> <td>• DSP</td> <td>□g/kg</td> <td>Max. 160</td> </tr> <tr> <td></td> <td>• ASP</td> <td>mg/kg</td> <td>Max. 20</td> </tr> <tr> <td></td> <td colspan="3">*Note: If required by market</td> </tr> </tbody> </table> <p style="margin-left: 20px;">Standard for Crackers of Marine and Freshwater Fish, Crustaceae, and Molluscan Shellfish (CODEX STAN 222-2001)</p>	No.	Testing Criteria	Unit	Requirements	a.	Organoleptic	Value (1-9)	Min. 7	b.	Microbiological Contaminants				• Total Plate Count	colony/g	Max. $5.0 \times 10^5$		• <i>Escherichia coli</i>	MPN/g	<3		• Salmonella	per 25 g	Negative		• <i>Vibrio cholerae</i>	per 25 g	Negative		• <i>Staphylococcus aureus</i>	colony/g	Max. $1.0 \times 10^3$	c.	Chemical Contaminants*				• Cadmium (Cd)	mg/kg	Max. 1.0		• Mercury (Hg)	mg/kg	Max. 0.5		• Lead (Pb)	mg/kg	Max. 1.0	d.	Biotoxine*				• PSP	□g/kg	Max. 800		• DSP	□g/kg	Max. 160		• ASP	mg/kg	Max. 20		*Note: If required by market		
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Food Additives	Processing aids used comply with SNI 3230.3: 2010 The Minister of Health of the Republic of Indonesia Regulation No. 722/Menkes/Per/IX/88 on Food Additives																																																																				
Contaminant	Head of the National Agency for Drug and Food Control of the Republic of Indonesia Regulation No. HK.00.06.1.52.4011 of 2009 on Maximum Level of Microbiological and Chemical Contaminants in Foods																																																																				

	No.	Testing Criteria	Unit	Requirements
	1	Microbiological Contaminants		
		• Total Plate Count	colony/g	Max. $5.0 \times 10^5$
		• <i>Escherichia coli</i>	MPN/g	<3
		• Salmonella	per 25 g	Negative
		• <i>Vibrio cholerae</i>	per 25 g	Negative
		• <i>Staphylococcus aureus</i>	colony/g	Max. $1.0 \times 10^3$
	2	Chemical Contaminants*		
		• Cadmium (Cd)	mg/kg	Max. 1.0
		• Mercury (Hg)	mg/kg	Max. 0.5
		• Lead (Pb)	mg/kg	Max. 1.0
Hygiene	Government Regulation of the Republic of Indonesia No. 28 of 2004 on Food Safety, Quality and Nutrition, Part One Sanitation (Article 2-10)			
	Handling and processing of frozen Scallop comply with SNI 3230.3: 2010			
	Raw materials comply with the freshness, cleanliness, and safety according to SNI 3230.2: 2010			
	Handling, processing, packaging, storage, distribution, and marketing of frozen Scallop are conducted with containers, methods and equipment according to hygiene and sanitation requirements of fishery products processing unit.			
Weights and Measures	Government Regulation of the Republic of Indonesia No. 69 of 1999 on Food Labelling and Advertisement			
Labelling	Government Regulation of the Republic of Indonesia No. 69 of 1999 on Food Labelling and Advertisement			
	Each pack of frozen Scallop for market is labeled correctly and easy to read with required language and comply with label and advertisement requirements. Labelling is in accordance with SNI 3230.3: 2010.			
Methods of Analysis and Sampling	Sampling Method Sampling in accordance with SNI 2326:2010: Sampling methods of fishery products.			
	Methods of Analysis			
	Sensory SNI 2346: Guideline of organoleptic and or sensory testing of fishery products.			
	Microbiology SNI 01-2332.1-2006: Microbiological testing, Chapter 1: Determination of Coliform and <i>Escherichia coli</i> in fishery			

	<p>products.</p> <p>SNI 01-2332.2-2006: Microbiological testing, Chapter 2: Determination of <i>Salmonella</i> in fishery products.</p> <p>SNI 01-2332.3-2006: Microbiological testing, Chapter 3: Determination of Total Plate Count in fishery products.</p> <p>SNI 01-2332.4-2006: Microbiological testing, Chapter 4: Determination of <i>Vibrio cholerae</i> in fishery products.</p> <p>SNI 01-2332.9-2006: Microbiological testing, Chapter 9: Determination of <i>Staphylococcus aureus</i> in fishery products.</p> <p>Chemistry</p> <p>SNI 01-2354.5-2006: Determination of cadmium (Cd) and lead (Pb) in fishery products.</p> <p>SNI 01-2354.6-2006: Determination of mercury (Hg) in fishery products.</p> <p>Biotoxine</p> <p>Association of Official Analytical Chemistry (Paralytic Shellfish Poison), Official Methods of Analysis, 18<sup>th</sup> Edition, 2005. Chapter 49.10.01</p> <p>Intergovernmental Oceanographic Commission (Diarrhetic Shellfish Poison). Manual of Harmful Microalgae, UNESCO, 2004. Chapter 13.4.1.2.2</p> <p>Intergovernmental Oceanographic Commission (Amnestic Shellfish Poison). Manual of Harmful Microalgae, UNESCO, 1995</p>
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### <Methods of Analysis> Prepared Frozen Foods

Related legislation	Item	Specification	Analytical Methods	Reference
Head of the National Agency for Drug and Food Control of the Republic of Indonesia Regulation No. HK.00.06.1.52.4011 of 2009 on Maximum Level of Microbiological and Chemical Contaminants in Food	Total Plate Count	< 1 x 10 <sup>4</sup> cfu/g	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	Coliforms	< 3/g (MPN)	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	<i>Salmonella sp.</i>	negative per 25g	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	<i>Staphylococcus aureus</i>	negative per g	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
SNI 01-6163-1999 Frozen breaded shrimp	Organoleptic	Min 7 on the hedonic scale (1-9)	SNI 01-2345-1991 Analytical method for organoleptic testing	

	Microbiological contaminants	Total plate count: $< 2 \times 10^5$ cfu/g; <i>Escherichia coli</i> $< 3$ MPN/g; Salmonella: absent per 25g; <i>Vibrio cholerae</i> : absent per 25g; <i>Vibrio parahaemolyticus</i> : $< 3$ /g (MPN); <i>Staphylococcus aureus</i> : $< 10^3$ cfu/g	SNI 01-2339-1991 Determination of total aerobic plate count in fishery products; SNI 01-2332-1991 Determination of <i>Escherichia coli</i> in fishery products; SNI 01-2335-1991 Determination of Salmonella in fishery products; SNI 01-2337-1991 Determination of <i>Staphylococcus aureus</i> in fishery products; SNI 01-2341-1991 Determination of <i>Vibrio cholera</i> in fishery products; SNI 01-2340-1991 Determination of <i>Vibrio parahaemolyticus</i> in fishery products;	
	Filth	0	SNI 01-2372.7-1998 Analytical method for physical testing of fishery products	
	Batter/dough and flour content	50% (weight)	AOAC Official Method No. 971.13 1986	
	Internal temperature	Max $-18^{\circ}\text{C}$	SNI 101-2378.1-1998 Determination of internal temperature of fish	
SNI 01-6683-2002 Chicken nugget	Quality characteristics for aroma, taste and texture	Aroma: normal/appropriate as per label; taste: normal/appropriate as per label; texture: normal	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Foreign matter	Not present	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Moisture content	Max 60% W/W	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Protein content	Min 12% W/W	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Fat content	Max 20% W/W	SNI 01-2891-1992 Analytical Methods for Food and Beverages	
	Carbohydrate content	Max 25% W/W	SNI 01-6683-2002 Item 6.6	
	Calcium (Ca)	Max 30 mg/kg	AOAC Official Method 975.03, 1990 Metal in Plants. AAS Method, SNI 01-6683-2002 Item 6.7	
	Preservatives & colourings	As specified in SNI 01-0222-1995	SNI 01-2894-1992 Analytical Methods for Food Additives/Preservatives; SNI 01-2895-1992 Analytical Methods for Artificial Sweeteners	

	Metal contaminants	Lead: < 2.0 mg/kg; Copper: < 20.0 mg/kg; Zinc: < 40.0 mg/kg; Tin: < 40.0 mg/kg; Mercury: < 0.03 mg/kg	SNI 01-2896-1998 Analytical Methods for Metal Contaminants;	
	Arsenic	< 1.0 mg/kg	SNI 01-4866-1998 Analytical Methods for Arsenic	
	Microbiological contaminants	Total plate count: < 5 x 10 <sup>4</sup> cfu/g; Coliforms: < 10 MPN/g; E. coli: <3 MPN/g; Salmonella: absent per 25g; <i>Staphylococcus aureus</i> : < 1 x 10 <sup>2</sup> cfu/g	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	Sampling	As specified in SNI 19-0428-1993 Sampling Guidelines for Solid Food Products		



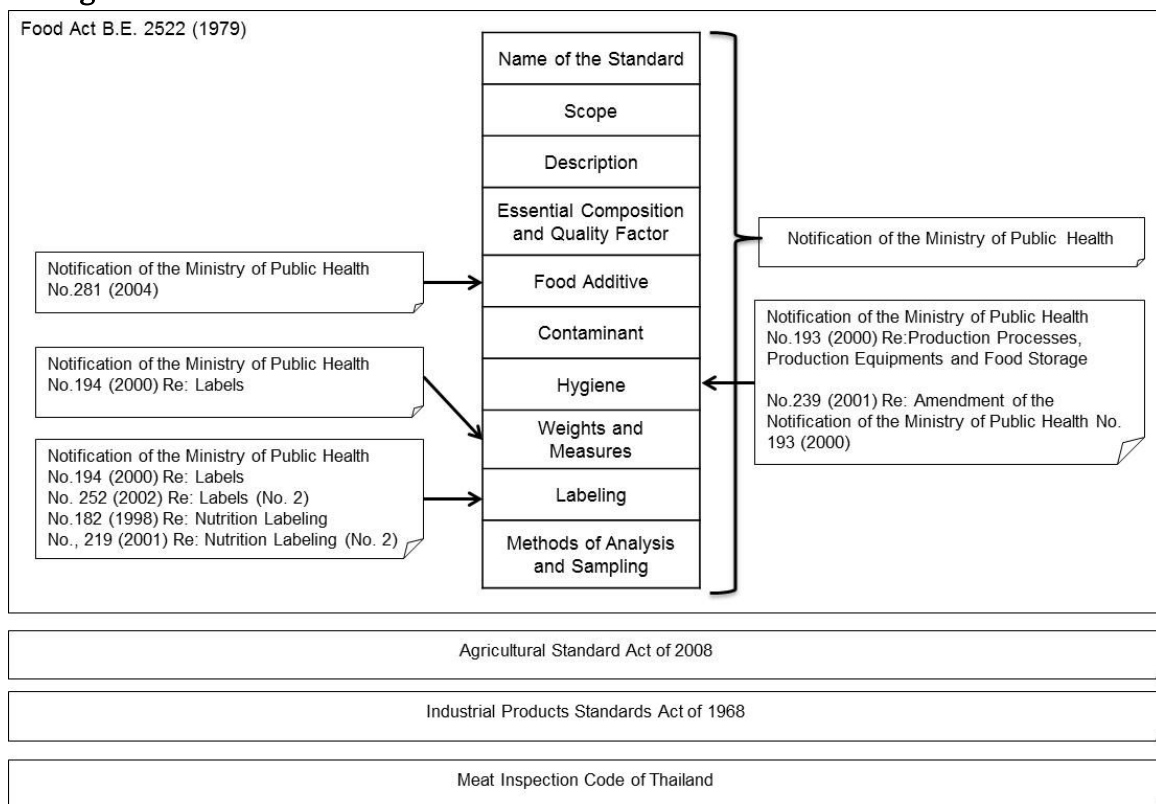
### 3.5.5 Thailand

#### 3.5.5.1 Food Administration

In Thailand, the administrative agency responsible for the food safety, food standards and hygienic control is Ministry of Public Health and Ministry of Agriculture and Cooperatives.

#### 3.5.5.2 Acts and Regulations related to Commodity Standards

A brief summary of food law in Thailand that relates to the elaboration and regulation of food commodity standards within the country is presented in **Figure 3.5-5** below.



**Figure 3.5-5 Food law in Thailand in relation to food commodity standards**

#### 3.5.5.3 Food Relevant Laws

##### (1) Food Act of B.E.2522 (1979)<sup>1</sup>

In Thailand, the Food Act of B.E.2522 (1979)<sup>1</sup> is the major law aimed at protecting and preventing consumers from health hazards occurring from food consumption. According to the Food Act, the Ministry of Public Health

<sup>1</sup> Food Act of B.E.2522

[http://www.qmaker.com/fda/new/images/cms/top\\_upload/1141813878\\_filena.pdf](http://www.qmaker.com/fda/new/images/cms/top_upload/1141813878_filena.pdf)

is designated to be in charge of the execution of this Act. The Act also empowered the Ministry of Public Health to promulgate ministerial regulations, to appoint the Food Committee and competent officers, and to set up other activities in order to carry out the provisions of the Act.

The Act defines the word “Food” as edible items and those which sustain life, including:

- (A) Substances that can be eaten, drunk, dissolved in the mouth or induced into the body by mouth, no matter in what form, but not including medicine, psychotropic and narcotic substances.
- (B) Substances intended for use or to be used as ingredients in the production of food including food additives, coloring and flavoring materials.

The Food Act classifies food into four categories as follows:

1. Specifically-controlled food - the category for which registration is required. Legal provisions are established regarding standard quality, specifications, packaging and labeling requirements, as well as other aspects of good manufacturing practice. At present, 14 types of food have been listed in this category.
2. Standardized food - the category for which quality standards will be defined by regulations. Food in this category is mainly locally produced food from small-scale or household industry. The main objective is to facilitate and encourage food producers on upgrading or at least maintaining hygienic quality of their products. Standardized food does not require registration but its quality and labeling have to meet the standard requirements as specified in the Notification of the Ministry of Public Health. There are 39 types of food in this category.
3. Food required to bear standard labels - the category which needs less-restricted control than the first two categories, as food under this category exposes a low risk of hazard to consumers’ health. There are 13 items of food in this category.
4. General food - food either raw, or cooked, preserved or non-preserved, processed or non-processed, if they are not listed under category 1, 2, or 3 will be considered as general food. Although registrations are not required, general food products are controlled and monitored on hygiene, safety, labeling and advertisement.



The Ministerial Regulations describe the procedures for applications for manufacturing licenses, importation licenses, and registration including the rates of fees, the identification card of the competent officers and the labeling of food products for exports. There are 12 issues of Ministerial Regulation issued pursuant to the Food Act B.E 2522 (1979).

## **(2) The Agricultural Standard Act B.E. 2551 (2008)<sup>2</sup>**

The Public Act known as “Agricultural Standard Act B.E. 2551 (2008)”, mandates the National Bureau of Agricultural Commodity and Food Standards (ACFS) to be “enforced on produce, product originated from agriculture, fishery, livestock or forestry and by-products”. The ACFS is a bureau established under the purview of the Ministry of Agriculture and Cooperatives. The responsibilities of the ACFS include:

- 1) Method, procedure or process for production management or characteristics of agricultural commodity pertaining to quality, safety on chemical, biological or physical aspects, sanitary and phytosanitary and related issues,
- 2) Pack, packing, marking or labeling,
- 3) Inspection, assessment, testing, experiment, analysis or research as related to 1) or 2), and
- 4) Other requirements as notified by the Minister of Agriculture and Cooperatives in the National Gazette

### **Establishment of Agricultural Standards**

There are two types of Agricultural Standards, namely:

- 1) Mandatory Standards which are regulated under the Ministerial Regulations, and
- 2) Voluntary Standards which are regulated under the Ministerial Notifications

The technical committee will be assigned to draft standards on agricultural commodity for endorsement by the Committee on Agricultural Standards which will recommend further to the Minister for issuing either Mandatory or Voluntary Standards as it is deemed necessary and relevant to circumstances.

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<sup>2</sup> [http://www.acfs.go.th/km/download/AGRICULTURAL\\_STANDARDS\\_ACT.pdf](http://www.acfs.go.th/km/download/AGRICULTURAL_STANDARDS_ACT.pdf)

## Mandatory vs. Voluntary Standards

- The producer, exporter or importer of agriculture commodity regulated under Mandatory Standards issued by the Ministerial Regulations is required to get license from the ACFS prior to operation of its activity. Its license shall be valid for three years.
- They are also required to get inspection and certification for approval of Mandatory Standards from service provider for standard inspection.
- They are not required to get license for operation involving Voluntary Standards but they may apply for standard inspection and certification from service provider in accordance with criteria, procedure and condition thereof under the Ministerial Regulations.

## Standard Certification Mark (Q-marks)

There are two types of standard certification mark, namely:

- 1) Certification mark for Mandatory Standards, and
- 2) Certification mark for Voluntary Standards,



Whereas, both standard marks shall be regulated by the Ministerial Regulations.

- The producer, exporter or importer of agricultural commodity regulated under Mandatory Standards is required to present standard mark prior to taking out of production unit or custom officer as the case may be.
- No one can apply certification mark unless producer, exporter or importer who receives certificate for either Mandatory or Voluntary Standards.

## (3) The Industrial Products Standards Act B.E. 2511 (1968)<sup>3</sup>

The public Act known as “Industrial Product Standard Act B.E. 2511 (1968)”, mandates the Thai Industrial Standards Institute (TISI) to “undertake standardization with commitment to the promotion and development of the industry, maximizing the benefits for entrepreneurs, consumers and the nation as a whole”. The TISI was established in the Ministry of Industry as the national standard body of Thailand. The responsibilities of the TISI include:

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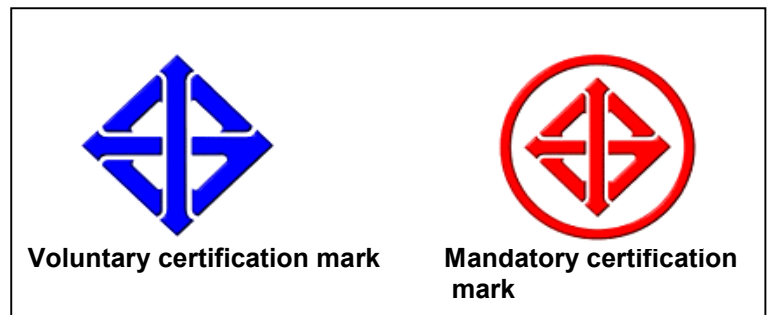
<sup>3</sup> [http://www.tisi.go.th/eng/index.php?option=com\\_content&view=article&id=20&Itemid=6](http://www.tisi.go.th/eng/index.php?option=com_content&view=article&id=20&Itemid=6)

- 1) Industrial Products Standards Act B.E. 2511 (1968)
- 2) Resolutions of the Cabinet
- 3) Policy and master plan of the Ministry of Industry
- 4) Policy of the government
- 5) The National Economic and Social Development Plan

TISI develops both mandatory and voluntary Thai Industrial Standards (TISs) to suit the need and the growth of industry, trade and economy of the country. Standards are developed according to the government policy in consumers protection, industrial promotion to be competitive in the world market, environmental protection and natural resources preservation. The standards cover all industrial products, food or non-food.

#### **Product certification according to TISs.**

The product certification scheme of TISI consists of two types with different certification marks. They are voluntary certification mark and mandatory certification mark



An example of mandatory standard is TIS 51-2530 (1987) Re: Canned pineapple (Effective Date 15 May 1988).

In 2002, the Ministry of Industry also appointed the Standard Committee of Community Products under the ministerial order number 400/2545 to be responsible for the followings.

- 1) To develop national standards and monitor quality of products and services to be in line with the requirements and international practices
- 2) To develop community product standards and provide certification service
- 3) To promote and develop national standardization activities
- 4) To cooperate with foreign standardization organizations both bilateral and multilateral levels
- 5) To provide information on standardization
- 6) To establish the national single network of standardization

The standards for community products were established to cover both food and non-food products. It is a voluntary standard aimed to upgrade the production and quality of merchandises from small and medium-size manufacturers.



#### **(4) The Meat Inspection Code of Thailand**

The Act known as “Control of Slaughtering and Selling Meat Act B.E. 2535 (1992)” mandates the Department of Livestock Development (DLD) as the “sole national controlling authority pertaining to meat and meat product inspection and meat hygiene”. The DLD is a department established under the Ministry of Agriculture and Cooperatives which is responsible for “establishing safety and quality standards for meat and meat products”. This Act excludes wildlife and includes cattle, goat, sheep and pigs. Subsequently in 2002 the Ministry had added chickens, ducks and geese. The relevant product standard in this case also includes the Notification of the Ministry of Public Health No. 243 B.E. 2544 (2001) Re: Meat Products.

#### **(5) Hygienic Standards in the Production of Fishery Products**

According to “The Fishery Act B.E. 2490 (1947)” there are insufficient data about standards of fishery products and sanitation. Nevertheless, there is the “Hygienic Standards in the Production of Fishery Products” issued by the National Institute of Coastal Aquaculture (NICA). The NICA is an institute established under the Department of Fisheries, Ministry of Agriculture and Cooperatives.

**Table 3.5-26 List of the Notification of the Ministry of Public Health issued by FDA, Thailand<sup>4</sup>**

<b>Notification Number</b>	<b>Title</b>
23 / 2522(1979)	Prescribed Peanut Oil to be Specific Controlled Food and Prescribed Qualities or Standards, Production Processes and Labelling
44 / 2523(1980)	Flour of Husked Rice
56 / 2524(1981)	Palm Oil
57 / 2524(1981)	Coconut Oil
61 / 2524(1981)	Drinking Water in Sealed Container
78 / 2527(1984)	Ice
83 / 2527(1984)	Chocolates
92 / 2528(1985)	Prescribed Quality or Standard for Food Containers, Use of Food Containers and Prohibition of Use of Certain Materials as Food Containers
98 / 2529(1986)	Standard for Foods with Contaminants, which are Sufficiently Supported
100 / 2529(1986)	Label of Finished Gelatin and Jelly
102 / 2529(1986)	Standards of Food Contaminated with Radioactivity
113 / 2531(1988)	Sodium Cyclamate and Foods Containing Sodium Cyclamate
116 / 2531(1988)	Standards of Food Contaminated with Radioactivity (No.2)
117 / 2532(1989)	Feeding Bottle
121 / 2532(1989)	Weight-Control Foods
135 / 2534(1991)	Drinking Water in Sealed Container (No.2)
137 / 2534(1991)	Ice (No.2)
144 / 2535(1992)	Food Packed in Sealed Container
150 / 2536(1993)	Vitaminized Rice
151 / 2537(1994)	Prescribed Prohibited Substances to be Used in Foods
156 / 2537(1994)	Modified Milk for Infant and Modified Milk of follow-up Formula for Infant and Children
157 / 2537(1994)	Food for Infant and Food of Follow-up Formula for Infant and Small Children
158 / 2537(1994)	Supplementary Food for Infants and Young Children
171 / 2539(1996)	Supplementary Food for Infants and Young Children (No.2)
174 / 2539(1996)	Prescribed Prohibited Food to be Imported or Sold
179 / 2540(1997)	Food in Sealed Containers (No.2)
182 / 2541(1998)	Nutrition Labelling
184 / 2543(2000)	Palm oil (No.2)
193 / 2543(2000)	Production Processes, Production Equipments, and Foods Storages
194 / 2543(2000)	Labels
195 / 2543(2000)	Electrolyte Dinks
196 / 2543(2000)	Tea
197 / 2543(2000)	Coffee
198 / 2543(2000)	Soybean Milk in Sealed Containers
199 / 2543(2000)	Mineral Water
200 / 2543(2000)	Sauces in Sealed Containers
201 / 2543(2000)	Some Particular Kinds of Sauces
202 / 2543 (2000)	Food Seasonings Derived from Hydrolysis or Fermentation of Soybean Protein
203 / 2543(2000)	Fish Sauce
204 / 2543(2000)	Vinegar
205 / 2543(2000)	Oil and Fat
206 / 2543(2000)	Butter Oil

<sup>4</sup> The Notifications of the Ministry of Public Health  
[http://www.qmaker.com/fda/new/web\\_cms/subcol.php?SubCol\\_ID=77&Col\\_ID=14](http://www.qmaker.com/fda/new/web_cms/subcol.php?SubCol_ID=77&Col_ID=14)  
<http://newsser.fda.moph.go.th/food/Law%20Notification%20of%20Ministry%20of%20PublicHealth07.php> (Thai version)

207 / 2543(2000)	Margarine
208 / 2543(2000)	Cream
209 / 2543(2000)	Cheese
210 / 2543(2000)	Semi-processed Food
211 / 2543(2000)	Honey
213 / 2543(2000)	Jam, Jelly and Marmalade in Sealed Containers
214 / 2543(2000)	Beverage in Sealed Containers
215 / 2544(2001)	Prescribed Prohibited Foods to be Produced, Imported or Sold
217 / 2544(2001)	Amendment of the Notification of the Ministry of Public Health (No.215) B.E. 2544 (2001)
219 / 2544(2001)	Nutrition Labelling (No.2)
220 / 2544(2001)	Drinking Water in Sealed Containers (No.3)
221 / 2544(2001)	Prescribed Foods to Show Food Serial Number on Food Labels
222 / 2544(2001)	Ice Cream
223 / 2544(2001)	Flavouring Agents
224 / 2544(2001)	Bread
226 / 2544(2001)	Ghee
227 / 2544(2001)	Butter
228 / 2544(2001)	Chewing Gum and Candy
229 / 2544(2001)	Repeal of the Notification of the Ministry of Public Health (No.162) B.E. 2538 (1995)
230 / 2544(2001)	Beverage in Sealed Containers (No.2)
232 / 2544(2001)	Repeal of the Notification of the Ministry of Public Health (No.14) B.E. 2522 (1979)
233 / 2544(2001)	Amendment of the Notification of the Ministry of Public Health (No.23), B.E. 2522 (1979), Prescribed Peanut Oil to be Specific Controlled Food and Prescribed Qualities or Standards, Production Processes, and Labellings
234 / 2544(2001)	Amendment of the Notification of the Ministry of Public Health (No.56) B.E. 2524 (1981), Palm Oil
235 / 2544(2001)	Amendment of the Notification of the Ministry of Public Health (No.57) B.E. 2524 (1981), Coconut Oil
236 / 2544(2001)	Alkaline-preserved Eggs
237 / 2544(2001)	Labelling of Ready-to-Cook Foods and Ready-to-Eat Foods
238 / 2544(2001)	Special Purposed Foods
239 / 2544(2001)	Amendment of the Notification of the Ministry of Public Health (No.193) B.E. 2543 (2000)
243 / 2544(2001)	Meat Products
244 / 2544(2001)	Labelling of Foods Packed Together with Material Intended for Qualities Control Purpose
245 / 2544(2001)	Labelling of Foods Containing Aloe Vera
246 / 2544(2001)	Amendment of the Notification of the Ministry of Public Health (No.217) B.E. 2544 (2001)
247 / 2544(2001)	Prescribed Prohibited Substances to be Used in Foods (No. 2)
248 / 2544 (2001)	Food Seasonings Derived from Hydrolysis or Fermentation of Soybean Protein (No.2)
251 / 2543(2000)	Labelling of Food Obtained through Certain Techniques of Genetic Modification/Genetic Engineering
252 / 2545(2002)	Labels (No.2)
253 / 2545(2002)	Foods in Sealed Containers (No.3)
254 / 2545(2002)	Ice (No.3)
255 / 2545(2002)	Labelling of Foods with Ginkgo biloba Leaves or Extraction from Ginkgo biloba Leaves
256 / 2545(2002)	Drinking Water in Sealed Containers (No.4)
257 / 2545(2002)	Ice Cream (No.2)
259 / 2545(2002)	Application of Methyl Alcohol as Processing Aid in Some Foods
262 / 2545(2002)	Stevioside and Foods Containing Stevioside
263 / 2545(2002)	Prescribed Prohibited Foods to be Produced, Imported or Sold

264 / 2545(2002)	Prescribed Prohibited Foods to be Produced, Imported or Sold
265 / 2545(2002)	Cow's Milk
266 / 2545(2002)	Flavoured Milk
267 / 2545(2002)	Other Milk Products
268 / 2546(2003)	Prescribed Standards for Certain Chemical Contamination in Foods
269 / 2546(2003)	Prescribed Standards for B-Agonist Chemicals Group Contamination in Foods
271 / 2546(2003)	Amendment of the Notification of the Ministry of Public Health (No.260) B.E. 2545 (2002)
272 / 2546(2003)	Distilled Spirits
273 / 2546(2003)	Standard for Foods with Contaminants (No.2)
275 / 2546(2003)	Distilled Spirits (No. 2)
276 / 2546(2003)	Coffee (No.2)
277 / 2546(2003)	Tea (No.2)
279 / 2546(2003)	Amendment of the Notification of the Ministry of Public Health (No.271) B.E. 2546 (2003)
280 /2547(2004)	Herbal tea
281 /2547(2004)	Food Additives
282 /2547(2004)	Cow's Milk (No.2)
283 /2547(2004)	Prescribed Total Polar Compounds in Used Frying Oil or Cooking Oil
284/2547(2004)	Drinking Water in Sealed Containers (No.5)
285 /2547(2004)	Ice (No.4)
286 /2547(2004)	Modified Milk for Infants and Modified Milk for follow-up Formula for Infants and Children (No.2)
287 /2548(2005)	Infant food and Food of Follow-up Formula for Infants and Young Children (No. 3)
288 / 2548(2005)	Foods with Toxic Residues
289 / 2548(2005)	Fermented Milk
290 / 2548(2005)	Beverage in Sealed Containers (No.3)
292 / 2548(2005)	Prohibited Foods to be Produced, Imported or Sold
293 / 2548(2005)	Dietary Supplement
294 / 2548(2005)	Royal Jelly and Royal Jelly Products
295 / 2548(2005)	Prescribed Qualities or Standards for Containers Made from Plastic
296 / 2549(2006)	Foods with Risk from Bovine Spongiform Encephalopathy
298 / 2549(2006)	Production Processes, Production Equipments, and Storage of Ready-to-Consume Milk Products in Liquid Form which Passed Through Pasteurization Heat Treatment
299 / 2549(2006)	Prescribed Standards for Certain Chemical Contamination in foods (No.2)
300 / 2549(2006)	Appointment of Competent Officers for the Execution of the Food Act B.E. 2522 (1979)
301 / 2549(2006)	Food Packed in Sealed Container (No.4)
303 / 2550(2007)	Veterinary Drug Residues in Foods
305 / 2550(2007)	Labelling of Certain Kinds of Ready-to-Eat Foods
307 / 2550(2007)	Modified Milk for Infant and Modified Milk of Follow up Formula for Infant and Young Children (No.3)
308 / 2550(2007)	Infant Food and Food of Follow-up Formula for Infants and Young Children (No.4)
309 / 2550(2007)	Dietary Supplements (No.2)
310 / 2551(2008)	Prohibition of Production, Importation or Sales of Foods Containing Other Non-Food Items or Objects in the Container and Packaging
311 / 2551(2008)	Prescribed Prohibited Food to be Produced, Imported of Sold
- / 2552 (2009)	Food Standard on Pathogens
- / 2552 (2009)	Distilled Spirits
- / 2553 (2010)	Drinking Water in Sealed Containers (No.6)
- / 2553 (2010)	Food Seasonings Derived from Hydrolysis or Fermentation of Soybean Protein
- / 2553 (2010)	Amendment of the Notification of the Ministry of Public Health (No.193)

	B.E. 2543 (2000)
- / 2553 (2010)	Amendment of the Notification of the Ministry of Public Health (No.220) B.E. 2544 (2001)
- / 2553 (2010)	Amendment of the Notification of the Ministry of Public Health (No.298) B.E. 2549 (2006)
- / 2553 (2010)	Iodized Salt
- / 2553 (2010)	Food Seasonings Derived from Hydrolysis or Fermentation of Soybean Protein (No.2)
- / 2553 (2010)	Fish Sauce (No.2)
- / 2553 (2010)	Brine for Cooking
- / 2553 (2010)	Irradiated Foods



#### **3.5.5.4 Methods of Analysis for General Foods**

In Thailand, methods of analysis for general foods covering all foods are required to comply with Food Act B.E. 2522 (1979). Methods of analysis for the food categories taken up in the Case Study are described in the charts under the tables for the standards for those food categories (**Tables 3.5-27 and 3.5-28**), respectively.

#### **3.5.5.5 Case Study**

##### **(1) Instant Noodles**

Regarding the food standards, the standards for semi-processed foods (Notification of the Ministry of Public Health No. 210 B.E. 2543 (2000)) are shown. As for the methods of analysis, items specified in the Notification of the Ministry of Public Health No. 210 B.E. 2543 (2000) are described (**Table 3.5-27**).

##### **(2) Carbonated water-based beverages**

Regarding the food standards, the standards for beverages in sealed container (Notification of Ministry of Public Health No. 214 B.E. 2543 (2000)) are shown. As for the methods of analysis, items specified in the Notification of Ministry of Public Health No. 214 B.E. 2543 (2000) are described (**Table 3.5-28**).

##### **(3) Frozen prepared foods**

No specific standards related to frozen prepared food products were found within any government regulations or other relevant standards documents in Thailand. The products are controlled under the standards relevant to specific issues e.g. microbiological quality, use of food additives, etc.

**Table 3.5-27 Case Study 1 Instant Noodles**

Standard Item	Notification of the Ministry of Public Health No. 210 B.E. 2543 (2000)
Name of the Standard	Semi-processed food
Scope	Semi-processed food is classified into 4 types as follows: 1. Noodle, a sheet of rice noodle (Guay-Jub), wheat noodle, rice vermicelli and mung bean vermicelli 2. Kao Tom (Boiled rice) and Joke (Porridge rice). 3. Broth and concentrated soup in cube, powdered or dried form. 4. Curries and curry pastes.
Description	<ul style="list-style-type: none"> <li>▪ Semi-processed Foods means food which has been passed through partially cooked processes, and can be consumed after passing simple cooked processes in short time, such as filling hot water, boiling or adding other food.</li> </ul>
Essential Composition and Quality Factor	Noodles shall be of the qualities or standards as follows: 1. Free of rancid odour. 2. Moisture content not more than 10% by weight, in case being fried with oil and not more than 13% by weight, in case made from other process. 3. Protein not less than 8.5% by weight for wheat noodle. 4. Free of pathogenic microorganisms. Bacillus cereus not more than 100 per 1 g of food. 5. Free of toxic substances released by microorganisms in quantity which may be hazardous to health. 6. Escherichia coli shall be found less than 3 per 1 g. of food by Most Probable Number Method. 7. Bacteria not more than 10,000 per 1 g. of wheat noodle and not more than 30,000 per 1 g. of noodle, a sheet of rice noodle (Guay-Jub), rice vermicelli and mung bean vermicelli. 8. Mold not more than 100 per 1 g of food.
Food Additives	<ul style="list-style-type: none"> <li>▪ In accordance to the notification of the Ministry of Public Health No. 281 (2004) Re: Food additives</li> </ul>
Contaminant	<ul style="list-style-type: none"> <li>▪ Not specified</li> </ul>
Hygiene	<ul style="list-style-type: none"> <li>▪ Semi-processed Foods producers or importers for sales shall follow to the notification of the Ministry of Public Health No.193 (2000) Re: Production processes, production equipments and foods storages.</li> </ul>
Weight and Measures	<ul style="list-style-type: none"> <li>▪ The net content by weight in metric system</li> </ul>
Labelling	<ul style="list-style-type: none"> <li>▪ Labelling of semi-processed foods shall be labeled and marked with the information according to the notification of the Ministry of Public Health No. 194 (2000) Re: Labels</li> <li>▪ Labels of foods to be sold to consumers must be expressed in Thai language alphabets, but may contain some foreign language alphabets which are acceptable and must be expressed of the following declarations, except for the exception from the Food and Drug Administration:</li> </ul>

	<ol style="list-style-type: none"> <li>1. Name of food.</li> <li>2. Food serial number.</li> <li>3. Names and addresses of producers or re-packers of food which is produced within the country, names and addresses of importers and country of producers as the case may be. For foods which are produced within the country, names and addresses of head office of producers or re-packers may be expressed instead.</li> <li>4. The net content by weight in metric system</li> <li>5. Main ingredients shall be expressed by percentage of approximate weight.</li> <li>6. Declaration of "Utilizing preservatives" for any usage.</li> <li>7. Declarations of "Natural colour" or "Artificial colour" for any usage cases.</li> <li>8. Declaration of "Utilize of .....for flavour enhancer" (the blank is for the name of flavour enhancer used.)</li> <li>9. Declaration of "Utilize of .....as food artificial sweetener" (the blank is for the name of artificial sweetener.) by alphabets of not smaller than 2 millimeter height and colour of the text shall be highly contrast with the background of the label.</li> <li>10. Declarations of "Natural flavour", "Identical artificial flavour", or "Artificial flavour" as the applicable case.</li> <li>11. Declarations of date, month and year of manufacture; month and year of manufacture; date, month and year of expiry; or date, month and year within which food remains in good quality or conforms to the standard</li> <li>12. Instruction for food storage. (If any)</li> <li>13. Food preparation method for consumption. (If any)</li> </ol>
Methods of Analysis and Sampling	<ul style="list-style-type: none"> <li>▪ Methods of sampling – shall be in accordance with those of the FAO/WHO Codex Alimentarius</li> </ul>

<Methods of Analysis> Instant Noodles

Related legislation	Item	Specification	Analytical Methods	Reference
Notification of the Ministry of Public Health No. 210 B.E. 2543 (2000)	Moisture content	Not more than 10% by weight, in case being fried with oil, and not more than 13% by weight, in case made from other process	Drying: oven or vacuum	AOAC standard method
	Protein	Not less than 8.5% by weight for wheat noodle	Kjeldahl	AOAC standard method
	Bacteria	Not more than 10,000 per 1 g of wheat noodle		Bacteriological Analytical Manual,
	Pathogenic microorganisms	Free from pathogenic microorganisms		Bacteriological Analytical Manual,
	<i>Bacillus cereus</i>	Not more than 100 per 1 g of food		Bacteriological Analytical Manual,
	<i>Escherichia coli</i>	Less than 3 per 1 g of food	Most Probable Number Method	Bacteriological Analytical Manual,
	Mold	Not more than 100 per 1 g of food		Bacteriological Analytical Manual,
	Toxic substances released by microorganisms	Free of toxic substances released by microorganisms in quantity which may be hazardous to health		
	Food Additives	Notification of the Ministry of Public Health No. 281 (2004) Re: Food additives	Depending on specific additives used	
	Contaminant	Not specified		

**Table 3.5-28 Case Study 2 Carbonated water-based beverages**

Item \ Standard	Notification of Ministry of Public Health No. 214 B.E. 2543 (2000)
Name of the Standard	Beverages in sealed container
Scope	<p>Beverages in Sealed Containers is prescribed to be specific controlled food, can be classified into 5 categories as follows:</p> <ol style="list-style-type: none"> <li>1. Water with dissolved carbon dioxide or oxygen gas.</li> <li>2. Beverage, which is containing or made from fruits, plants or vegetables, and may also contain dissolved carbon dioxide or oxygen gas.</li> <li>3. Beverage, which is containing or made from other constituents, except fruits, plants or vegetables, and may also contain dissolved carbon dioxide or oxygen gas.</li> <li>4. Beverage as stipulated in (2) or (3), which is concentrated and needs to be diluted before consumption.</li> <li>5. Beverage as stipulated in (2) or (3) in dried form.</li> </ol>
Description	<ul style="list-style-type: none"> <li>▪ Carbonated drink (soda) – A ready-to-drink beverage prepared by mixing carbonated water and sweetening agent or agents with citrus sugar-concentrate or extract.</li> </ul>
Essential Composition and Quality Factor	<ol style="list-style-type: none"> <li>1. Odour and flavour inherent to specific characteristics of that beverage.</li> <li>2. Free of sediment, except sedimentation naturally occurring from ingredients.</li> <li>3. Water to be used in production shall follow to qualities or standards in the notification of the Ministry of Public Health, Re: Drinking water in Sealed Containers.</li> <li>4. Coliform bacteria shall be found less than 2.2 per 100 ml. of beverage by Most Probable Number Method.</li> <li>5. Free of Escherichia coli.</li> <li>6. Free of pathogenic microorganisms.</li> <li>7. Free of toxic substances released by microorganisms or other toxic substances in quantity which may be hazardous to health.</li> <li>8. Free of yeast and mold</li> <li>9. Natural alcoholic content from ingredients or alcohol used in production process, the total quantity of alcohol shall be not more than 0.5% by weight. In necessary case where total quantity of alcohol is higher than prescription, such matters must be approved by the Food and Drug Administration.</li> </ol> <p>Methyl alcohol shall not be used in production process.</p>
Food Additives	<p>Artificial sweetener shall follow the Food Standard of Joint FAO/WHO Codex Re: Food additives, and the amended version, and may be used in single or combination with sugar.</p> <p>In case where no standards is prescribed in the first phrase, the Food and Drug Administration shall prescribe according to an approval of the Food Committee.</p>
Contaminant	<p>Free of contaminants, except the followings:</p> <ul style="list-style-type: none"> <li>▪ Arsenic not more than 0.2 mg per 1 kg of beverage.</li> <li>▪ Lead not more than 0.5 mg per 1 kg of beverage.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Copper not more than 5 mg per 1 kg of beverage.</li> <li>▪ Zinc not more than 5 mg per 1 kg of beverage.</li> <li>▪ Iron not more than 15 mg per 1 kg of beverage.</li> <li>▪ Tin not more than 250 mg per 1 kg of beverage.</li> <li>▪ Sulfur dioxide not more than 10 mg per 1 kg of beverage.</li> </ul>
Hygiene	<ul style="list-style-type: none"> <li>▪ Prepared and handled in accordance to the notification of the Ministry of Public Health No.193 (2000) Re: Production processes, production equipments and foods storages.</li> </ul>
Weight and Measures	<ul style="list-style-type: none"> <li>▪ The net volume in metric system</li> </ul>
Labelling	<ul style="list-style-type: none"> <li>▪ Labels for beverage shall follow to the notification of the Ministry of Public Health No. 194 (2000), Re: Labels</li> </ul> <ol style="list-style-type: none"> <li>1. Name of food.</li> <li>2. Food serial number.</li> <li>3. Names and addresses of producers or re-packers of food which is produced within the country, names and addresses of importers and country of producers as the case may be. For foods which are produced within the country, names and addresses of head office of producers or re-packers may be expressed instead.</li> <li>4. The net volume in metric system</li> <li>5. Main ingredients shall be expressed by percentage of approximate weight</li> <li>6. Declaration of “Utilizing preservatives” for any usage.</li> <li>7. Declarations of “Natural colour” or “Artificial colour” for any usage cases.</li> <li>8. Declaration of “Utilize of .....for flavour enhancer” (the blank is for the name of flavour enhancer used.)</li> <li>9. Declaration of “Utilize of .....as food artificial sweetener” (the blank is for the name of artificial sweetener.) by alphabets of not smaller than 2 millimeter height and colour of the text shall be highly contrast with the background of the label.</li> <li>10. Declarations of “Natural flavour”, “Identical artificial flavour”, or “Artificial flavour” as the applicable case.</li> <li>11. Declarations of date, month and year of manufacture; month and year of manufacture; date, month and year of expiry; or date, month and year within which food remains in good quality or conforms to the standard</li> <li>12. Instruction for food storage. (If any)</li> </ol>
Methods of Analysis and Sampling	<ul style="list-style-type: none"> <li>▪ Methods of sampling – shall be in accordance with those of the FAO/WHO Codex Alimentarius</li> </ul>

<Methods of Analysis> Carbonated water-based beverages

Related legislation	Item	Specification	Analytical Methods	Reference
Notification of Ministry of Public Health No. 214 B.E. 2543 (2000)	Coliform bacteria	Less than 2.2 per 100 ml. of beverage	Most Probable Number Method	Bacteriological Analytical Manual,
	<i>Escherichia coli</i>	Free of <i>Escherichia coli</i>		Bacteriological Analytical Manual,
	Pathogenic microorganisms	Free from pathogenic microorganisms		Bacteriological Analytical Manual,
	Yeast and mold	Free of yeast and mold		Bacteriological Analytical Manual,
	Toxic substances released by microorganisms	Free of toxic substances released by microorganisms in quantity which may be hazardous to health		
	Alcohol	Not more than 0.5% by weight		
	Free of contaminants, except the followings:			
	* Arsenic	Not more than 0.2 mg per 1 kg of beverage	Atomic absorption	
	* Lead	Not more than 0.5 mg per 1 kg of beverage	Atomic absorption	
	* Copper	Not more than 5 mg per 1 kg of beverage	Atomic absorption	
	* Zinc	Not more than 5 mg per 1 kg of beverage	Atomic absorption	
	* Iron	Not more than 15 mg per 1 kg of beverage	Atomic absorption	
	* Tin	Not more than 250 mg per 1 kg of beverage		
	* Sulfur dioxide	not more than 10 mg per 1 kg of beverage	Optimized Monier-Williams	





### **3.5.6 Vietnam**

#### **3.5.6.1 Food Administration (Food safety management)**

Responsibilities for the management of food safety in Vietnam are divided among several state-level ministries as well as the People's Committees at the provincial level. These ministries include the Ministry of Health (MOH), Ministry of Agriculture and Rural Development (MARD), as well as the Ministry of Industry and Trade (MIT).

According to the Law on Food Safety, the Ministry of Health has the leading role for food safety management at the national level, which includes the formulation of national policies on food safety and the coordinating of their implementation. At the provincial and local levels, these responsibilities are undertaken by the People's Committees. MOH is also responsible for the promulgation of national technical regulations related to food safety for food products (including raw and processed foods), food-packaging tools, food packaging and food containers. The Ministry has been given the authority to develop policies and manage food safety for the processed food sector, which includes food additives, food processing aids, bottled drinking water, natural mineral water, and functional foods. Within the purview of the Ministry of Health, these duties have been delegated to the Vietnam Food Administration (VFA). The Ministry of Health is also responsible for food quality according to the Law on Product and Goods Quality.

The Ministry of Agriculture and Rural Development is responsible for policy making and management of food safety for the primary production sector, which includes products such as cereals, meat and products thereof, aquatic animals and products thereof, vegetables, tuber and fruits and products thereof, eggs and products thereof, fresh milk, honey and products thereof, genetically modified food, salt and other farm products. Similarly to MOH, these duties have been delegated to the National Agro-Forestry-Fisheries Quality Assurance Department (NAFIQAD). It is worth noting that within its purview, MARD may also issue regulations that are normative in nature, which appear to be equivalent to technical regulations.

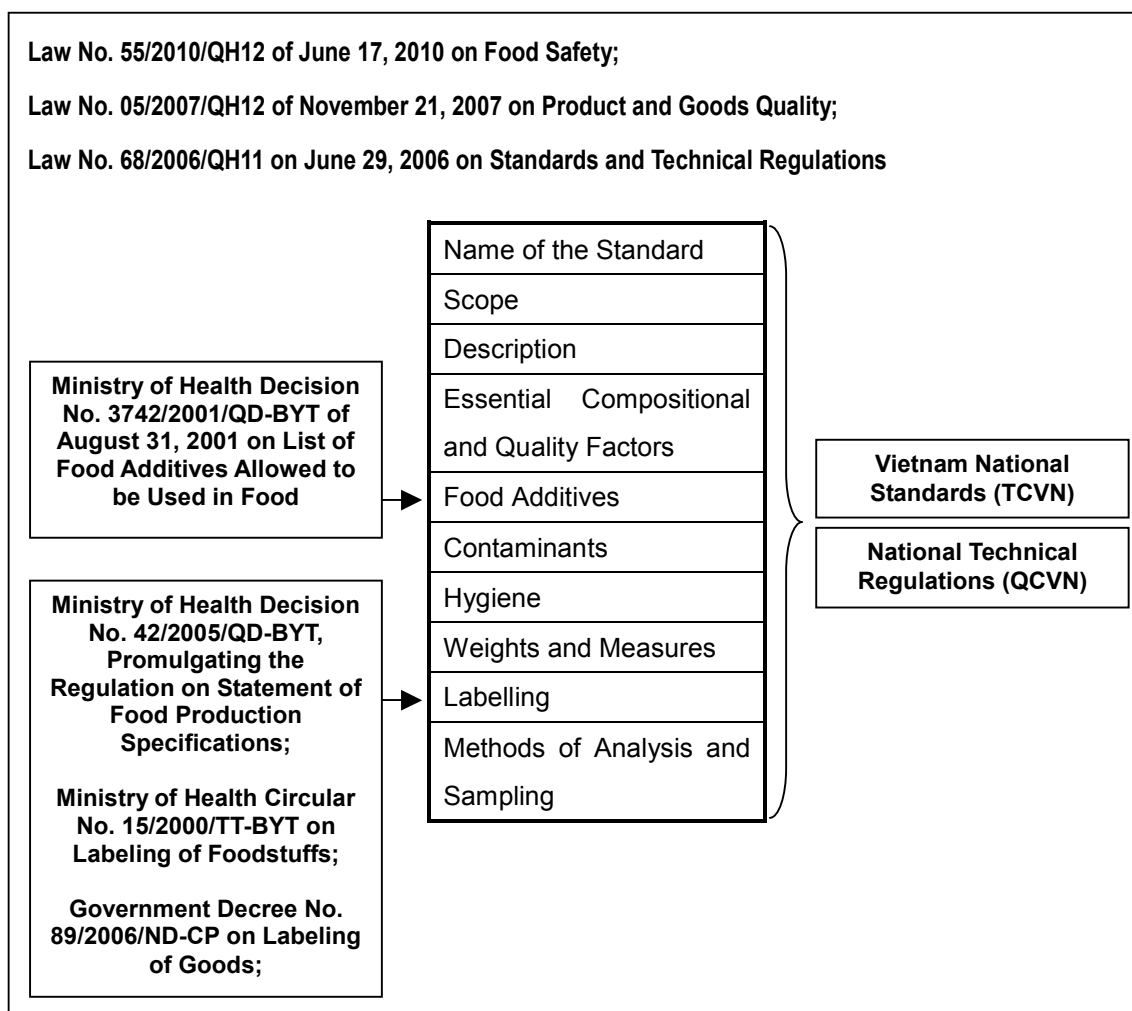
The Ministry of Industry and Trade is responsible for policy making and management of food safety for specific food sectors that manufacture products including liquor, beer, beverage, processed milk, vegetable oil, and

powder and starch processed products. Apart from this, MIT is primarily responsible for food safety at markets and supermarkets, as well as for regulation of fake food and fraud in food trade.

In Vietnam, Laws are promulgated by the National Assembly (equivalent to an act of parliament), which is the highest legislative authority in the country. Subsequently, Ordinances are issued by the Standing Committee of the National Assembly (second highest legislative body). This is followed by Presidential Orders and Decisions, Government Decrees and Resolution, Prime Minister’s Decisions and Directives, and finally Decisions, Directives, Circulars and Joint Circulars by the Ministers.

### 3.5.6.2 Acts and Regulations related to Commodity Standards

A brief summary of the food laws in Vietnam that relate to regulation and standards for food products/commodities are presented in **Figure 3.5-6** below.



**Figure 3.5-6 Food law in Vietnam in relation to food commodity regulations and standards**

### **3.5.6.2 Food Relevant Laws**

#### **(1) Law No. 55/2010/QH12 of June 17, 2010 on Food Safety**

Law No. 55/2010/QH12 of June 17, 2010 (herein known as the ‘Law on Food Safety’) is the ‘general food law’ of Vietnam, replacing the earlier Ordinance on Hygiene and Food Safety issued on November 31, 2003. It is divided into 11 chapters and outlines the general principles of food safety management and declares the state policies for food safety. It also touches upon the specific areas for food safety assurance, including:

- 1) General conditions;
- 2) Fresh and raw food;
- 3) Processed food;
- 4) Micronutrient-fortified food;
- 5) Functional food;
- 6) Genetically modified food;
- 7) Irradiated food;
- 8) Food additives and processing aids;
- 9) Food packaging tools, food packaging and food containers;
- 10) Small-scale food production;
- 11) Street food;
- 12) Imported foods;
- 13) Food advertisement and labelling;
- 14) Food testing;
- 15) Risk analysis;
- 16) Food safety incident management;
- 17) Traceability and recalls; and
- 18) Information, education and communication on food safety

#### **(2) Law No. 05/2007/QH12 of November 21, 2007 on Product and Goods Quality**

Law No. 55/2010/QH12 of June 17, 2010 (herein known as the ‘Law on Product Quality’) serves the purpose of a consumer protection law and provides for the rights and obligations of organizations and individuals producing or trading in products as well as organizations and individuals conducting activities related to product and goods quality, as well as the principles for the management of product and good quality. In relation to food regulation, it assigns responsibility to the Ministry of Health for controlling product and goods quality for food, and Ministry of Agriculture and Rural Development (MARD) for plants, animals, animal feeds, plant

protection products, veterinary drugs, and other bio-products related to agriculture or aquaculture.

### **(3) Law No. 68/2006/QH11 of June 29 2006 on Standards and Technical Regulations**

Law No. 68/2006/QH11 of June 29 2006 on Standards and Technical Regulations (herein known as the ‘Law on Standards and Technical Regulations’) provides for the formulation, announcement and application of standards; the formulation, promulgation and application of technical regulations; and the assessment of conformity with standards and technical regulations. The law places the responsibility of leading and coordinating the standard setting process with the Ministry of Science and Technology, while ministries and ministerial agencies lead the process for development of technical regulations. Standards can be either mandatory or voluntary, while technical regulations are strictly mandatory.

Standards are defined in the Law as “regulation on technical characteristics and management requirements used as standards for classifying and appraising products, goods, services, processes, the environment and other objects in socio-economic activities with a view to improving the quality and effectiveness of these objects”; while technical regulations are defined as “regulation on the limits of technical characteristics and management requirements which products, goods, services, processes, the environment and other objects in socio-economic activities must comply with in order to ensure safety, hygiene and human health; to protect animals, plants and environment; to safeguard national interests and security, consumer interests and other essential requirements.”

#### **3.5.6.3 Selected food regulations**

Some food regulations that are relevant to the investigation of food commodity standards in Vietnam are as follows:

- 1) Food additives –  
Ministry of Health Decision No. 3742/2001/QD-BYT of August 31, 2001 on List of Food Additives Allowed to be Used in Food
- 2) Hygiene –  
Ministry of Health QVCN: 2010/BYT National technical regulation on the safety limits of Microbiological contaminants in food;  
Ministry of Agriculture and Rural Development Circular No. 29/2010/TT-BNNPTNT on Promulgating the list of food safety criteria and maximum levels thereof in certain

domestically-produced or imported foodstuffs of animal origin under the management of the Ministry of Agriculture and Rural Development

3) Labeling –

Government Decree No. 89/2006/ND-CP on Labeling of Goods

Ministry of Health Decision No. 42/2005/QD-BYT, Promulgating the Regulation on Statement of Food Production Specifications;

Ministry of Health Circular No. 15/2000/TT-BYT on Labeling of Foodstuffs;

#### **3.5.6.4 Food standards**

In Vietnam, there are two types of normative instruments used for standardization of safety and quality for food products and processes, which are the standards and technical regulations. As described in the Law on Standards and Technical Regulations, standards differ from technical regulations in that they define technical characteristics for technical characteristics of the products, goods, services, processes, environment, etc. while technical regulations define limits to these technical characteristics, which must be complied with the view of ensuring human, animal, plant and environmental health, as well as safeguard national interests, security and consumer interests.

For standards, there are two kinds including National Standards (symbolized by ‘TCVN’), which can be mandatory in nature (when used as the reference by regulatory agencies), and Local Standards (symbolized by ‘TCCS’), which are voluntarily adopted by manufacturers. Standards are developed by the Directorate for Standards, Metrology and Quality (STAMEQ) under the Ministry of Science and Technology. STAMEQ under the Ministry of Science and Technology leads and coordinates between different ministries, ministerial-level agencies and government-attached agencies in setting national standards.

National technical regulations (symbolized by ‘QCVN’) on the other hand, are promulgated by the respective ministries and ministerial agencies in consultation with the Ministry of Science and Technology. As mentioned in the previous section, the Ministry of Health is responsible for promulgating technical regulations for all food products, food-packaging tools, food packaging and food containers. Nevertheless, there also exist regulations (in the form of Decisions, Directives and Circulars) by other ministries that are

equivalent to technical regulations. One example can be seen in ‘Circular No. 29/2010/TT-BNNPTNT of the Ministry of Agriculture and Rural Development on Promulgating the list of food safety criteria and maximum levels thereof in certain domestically-produced or imported foodstuffs of animal origin under the management of the Ministry of Agriculture and Rural Development’.

In Vietnam, the national standards (TCVN) appear to widely cover not only the food commodity standards but also food storage methods, methods of analysis, standards for food additives, practice standards for food hygiene, labelling methods for general processed foods.

In **Table 3.5-29** below, only the standards that are considered as TCVN for food specifications judging from the titles are listed.

**Table 3.5-29 Food Commodity Standards**

ICS No.	TCVN No.	Title (Vietnum)	Title (English)
67.080.20	4845-89	Ca` chua tu+o+i	Fresh tomatoes
67.180.20	5909:1995	Ba`nh bi`ch quy. Ye`u ca`u ky~ thua^t	Biscuits. Specifications
67.140.30	7518:2005	Ha.t cacao. Thua^t ngu+~ va` ?i.nh nghi~a	Cocoa beans. Terms and definitions
67.080.10	1873-86	Cam qu?a tu+o+i xua^t kha^?u	Fresh oranges for export
67.120.30	7525:2006	Va`y ca` ma^.p kho^	Dried shark fins
67.140.20	6929:2001	Ca` phe^ nha^n. Hu+o+ng da^~n phu+o+ng pha`p mo^ ta? ca`c quy ?i.nh	Green coffee. Guidance on methods of specification
67.160.10	1647-75	Ru+o+.u cam. Ye`u ca`u ky~ thua^t	Orange liquor. Specification
67.120.30	2066-77	Ca` la`m sa(~n ?o^ng la.nh (u+o+p ?o^ng). Ye`u ca`u ky~ thua^t	Frozen dressed fishes. Specifications
67.140.10	2843-79	Che` ?o.t tu+o+i. Ye`u ca`u ky~ thua^t	Tea leaves. Specifications
67.120.10	4377:1993	Thi.t lo+.n la.nh ?o^ng	Frozen pork for export
67.220.10	7037:2002	Ha.t tie`u tra(^ng (piper nigrum L.). Quy ?i.nh ky~ thua^t	White pepper (Piper nigrum L.). Specification
67.200.10	6044:2007	Mo+~ ?o^.ng va^t	Animal fats
67.200.10	6031:1995	Da`u chanh nha^.n ?u+o+.c ba(^ng chu+ng ca^t	Oil of lime, obtained by distillation
67.120.30	2646-78	Ca` bie^?n u+o+p nu+o+c ?a`. Ye`u ca`u ky~ thua^t	Iced salt-water fishes. Specifications
67.220.20	5647:1992	Muo^i io^t	Iodinated salt
67.120.30	4544-88	To^m tu+o+i. Pha^n loa.i theo gia` tri. su+? du.ng	Fresh shrimps. Classification for use
01.040.67	5643:1992	Ga.o. Thua^t ngu+~ va` ?i.nh nghi~a	Rice. Terms and definitions
67.080.10	1872:2007	Chuo^i qua? tu+o+i	Bananas
67.080.10	1577:1994	?o^ ho^.p qu?a. Va?i ho^.p	Canned fruits. Canned litchi
67.080.10	1870:2007	Mu+t cam, quy`t	Citrus marmalade
67.080.10	5259-1990	Chuo^i xanh. ?ie`u kie^.n la`m chi`n	Green bananas. Ripening conditions

67.060	4359-86	Bo <sup>^</sup> .t mi <sup>~</sup> . Ye <sup>^</sup> u ca <sup>^</sup> u ky <sup>~</sup> thua <sup>^</sup> .t	Wheat flour. Specifications
67.080.20	4844-89	Du+a chuo <sup>^</sup> .t tu+o+i	Fresh cucumbers
67.080.20	5606:1991	?o <sup>^</sup> ho <sup>^</sup> .p rau. Na <sup>^</sup> m ho <sup>^</sup> .p	Canned vegetables. Canned mushrooms
67.160.20	1682:1994	?o <sup>^</sup> ho <sup>^</sup> .p nu+o+'c qu?a. Nu+o+'c cam	Canned fruit juices. Orange juice
001.040.67	3294-1980	Sa?n xua <sup>^</sup> t tinh bo <sup>^</sup> .t. Thua <sup>^</sup> .t ngu+~ va <sup>~</sup> ?i.nh nghi~a	Starch production. Terms and definitions
67.200.10	6309:1997	Da <sup>^</sup> u ?a <sup>^</sup> .u tu+o+ng thu+.c pha <sup>^</sup> ?m	Edible soya bean oil
67.180.10	5908:1995	Ke.o. Ye <sup>^</sup> u ca <sup>^</sup> u ky <sup>~</sup> thua <sup>^</sup> .t	Sweets. Specifications
67.080.10	1440-1986	?o <sup>^</sup> ho <sup>^</sup> .p qu?a. Ma <sup>^</sup> .n nu+o+'c ?u+o+'ng	Canned fruits. Plum in syrup
67.160.20	1549:1994	?o <sup>^</sup> ho <sup>^</sup> .p qu?a. Nu+o+'c du+'a	Canned fruits. Pineapple juice
67.140.10	5087-90	Che <sup>~</sup> ?en. Thua <sup>^</sup> .t ngu+~ va <sup>~</sup> ?i.nh nghi~a	Black tea. Terms and definitions
67.040	7087:2002	Ghi nha~n thu+.c pha <sup>^</sup> ?m bao go'i sa(~n	Labeling of prepackaged foods
67.120.30	3692-81	Ca' nu+o+'c ngo.t. Ca' bo <sup>^</sup> .t. Ye <sup>^</sup> u ca <sup>^</sup> u ky <sup>~</sup> thua <sup>^</sup> .t	Fresh water fishes. Fries. Specification
67.120.10	7047:2002	Thi.t la.nh ?o <sup>^</sup> ng. Quy ?i.nh ky <sup>~</sup> thua <sup>^</sup> .t	Frozen meat. Specification
67.140.10	3242-79	Hom che <sup>~</sup> gio <sup>^</sup> ng	Tea cuttings
67.020	7247:2003	Thu+.c pha <sup>^</sup> ?m chie <sup>^</sup> u xa.. Ye <sup>^</sup> u ca <sup>^</sup> u chung	Irradiated foods. General requirements
67.120.30	3590-1988	Rong ca <sup>^</sup> u	Gracilaria
67.140.20	4193:2005	Ca <sup>~</sup> phe <sup>^</sup> nha <sup>^</sup> n	Green coffee
67.080.10	1577:2007	Va?i ho <sup>^</sup> .p	Canned lychee
67.200.20	4850-89	Nha <sup>^</sup> n ha.t ?ie <sup>^</sup> u. Ye <sup>^</sup> u ca <sup>^</sup> u ky <sup>~</sup> thua <sup>^</sup> .t	Caskew kernels. Specifications
67.060	1683-86	Ba <sup>^</sup> nh mi <sup>~</sup> . Ye <sup>^</sup> u ca <sup>^</sup> u ky <sup>~</sup> thua <sup>^</sup> .t	Bread. Specification
67.080.20	4845:2007	Ca <sup>~</sup> chua tu+o+i	Fresh tomatoes
67.060	6095:1995	Ha.t lu'a mi <sup>~</sup> . Ye <sup>^</sup> u ca <sup>^</sup> u ky <sup>~</sup> thua <sup>^</sup> .t	Wheat. Specifications
67.120.30	7106:2002	Ca' phile ?o <sup>^</sup> ng la.nh nhanh	Quick frozen fish fillets
67.140.20	5250:2007	Ca <sup>~</sup> phe <sup>^</sup> rang	Roasted coffee
67.080.10	7856:2007	Du+'a ?o <sup>^</sup> .ng la.nh. Pha <sup>^</sup> n ha.ng	Grades of frozen pineapple
67.120.30	3695-81	Ca' nu+o+'c ngo.t. Ca' bo <sup>^</sup> me.. Ye <sup>^</sup> u ca <sup>^</sup> u ky <sup>~</sup> thua <sup>^</sup> .t	Fresh water fishes. Fish breeders. Specification
67.120.30	3726-89	To <sup>^</sup> m nguye <sup>^</sup> n lie <sup>^</sup> .u tu+o+i	Fresh shrimps for food processing
67.220.10	2080-86	o+'t bo <sup>^</sup> .t xua <sup>^</sup> t kha <sup>^</sup> ?u	Powdered chillies for export
67.100.10	7979:2009	Su+~a bo <sup>^</sup> .t va <sup>~</sup> cream bo <sup>^</sup> .t	Milk powders and cream powder
67.100.10	6403:2007	Su+~a ?a(.c co <sup>~</sup> ?u+o+'ng	Sweetened condensed milk
67.040	7399:2004	Tie <sup>^</sup> u chua <sup>^</sup> ?n chung cho ca'c sa?n pha <sup>^</sup> ?m protein thu+.c va <sup>^</sup> .t	General standard for vegetable protein products (VPP)
67.120.30	6392:1998	Ca' xay che <sup>^</sup> bie <sup>^</sup> n hi <sup>~</sup> nh que, ca' ca('t mie <sup>^</sup> ng, ca' phile <sup>^</sup> . Ta <sup>^</sup> ?m bo <sup>^</sup> .t xu <sup>~</sup> va <sup>~</sup> bo <sup>^</sup> .t nha~o ?o <sup>^</sup> ng la.nh nhanh	Quick frozen fish sticks (fish finger) fish portion and fish fillets. Breaded or in batter
67.180.10	5267-90	Ma <sup>^</sup> .t ong tu+. nhie <sup>^</sup> n. Ye <sup>^</sup> u ca <sup>^</sup> u ky <sup>~</sup> thua <sup>^</sup> .t	Honey. Specifications
67.060	5932:1995	Ba <sup>^</sup> nh pho <sup>^</sup> ng to <sup>^</sup> m. Ye <sup>^</sup> u ca <sup>^</sup> u ky <sup>~</sup> thua <sup>^</sup> .t	Dried prawn crackers. Specifications
67.080.10	7398:2004	Tu+o+ng ca <sup>~</sup> chua. Ye <sup>^</sup> u ca <sup>^</sup> u ky <sup>~</sup> thua <sup>^</sup> .t	Tomato sauce. Technical requirements
67.120.10	7048:2002	Thi.t ho <sup>^</sup> .p. Quy ?i.nh ky <sup>~</sup> thua <sup>^</sup> .t	Canned meat. Specification

67.080.10	1872-86	Chuo <sup>^</sup> i tie <sup>^</sup> u tu+o+i xua <sup>^</sup> t kha <sup>^</sup> ?u	Fresh bananas for export
67.100.10	7108:2008	Thu+ <sup>c</sup> a(n theo co <sup>^</sup> ng thu+ <sup>c</sup> da <sup>^</sup> nh cho tre? so+ sinh va <sup>^</sup> thu+ <sup>c</sup> a(n theo co <sup>^</sup> ng thu+ <sup>c</sup> vo+ <sup>i</sup> ca <sup>^</sup> c mu.c ?i'ch y te <sup>^</sup> ?a(.c bie <sup>^</sup> .t da <sup>^</sup> nh cho tre? so+ sinh	Standard for infant formula and formulas for special medical purposes intended for infants
67.220.10	5837:1994	Ha.t tie <sup>^</sup> u. Ye <sup>^</sup> u ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Pepper. Specifications
67.100.10	5539:2002	Su+~a ?a(.c co' ?u+o+ <sup>^</sup> ng. Quy ?i.nh ky~ thua <sup>^</sup> .t	Sweetened condensed milk. Specification
67.080.10	1578:1994	?o <sup>^</sup> ho <sup>^</sup> .p qu?a. Cam qui't ho <sup>^</sup> .p	Canned fruits. Canned mandarin oranges
67.120.30	4379-86	Thu?y sa?n ?o <sup>^</sup> ng la.nh xua <sup>^</sup> t kha <sup>^</sup> ?u. Ca'. Ye <sup>^</sup> u ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Frozen aquatic products for export. Fishes. Specifications
67.080.10	187:1994	?o <sup>^</sup> ho <sup>^</sup> .p qu?a. Du+ <sup>a</sup> ho <sup>^</sup> .p	Canned fruits. Canned pineapple
67.100.10	6403:1998	Su+~a ?a(.c co' ?u+o+ <sup>^</sup> ng va' su+~a ?a(.c co' ?u+o+ <sup>^</sup> ng ?a~ ta'ch cha <sup>^</sup> t be'o	Sweetened condensed milk and skimmed sweetened condensed milk
67.160.20	6096:1995	Nu+o+ <sup>c</sup> uo <sup>^</sup> ng ?o <sup>^</sup> ng chai	Bottled drinking water
67.080	1873:2007	Cam tu+o+i	Oranges
67.180.10	6961:2001	?u+o+ <sup>^</sup> ng tho <sup>^</sup>	Raw sugar
67.120.30	6391:2008	Ca' ?o <sup>^</sup> ng ho <sup>^</sup> .p	Canned finfish
67.120.30	6392:2008	Ca' xay che <sup>^</sup> bie <sup>^</sup> n hi <sup>^</sup> nh que, ca' mie <sup>^</sup> ng va' ca' phile <sup>^</sup> ta <sup>^</sup> ?m bo <sup>^</sup> .t xu' hoa(.c bo <sup>^</sup> .t nha~o ?o <sup>^</sup> ng la.nh nhanh	Quick frozen fish sticks (fish finger), fish portions and fish fillets-breaded or in batter
67.080.10	5605:2008	Ca' chua ba?o qua?n	Preserved tomatoes
67.200.20	2383:2008	La.c	Peanuts
67.06	5643:1999	Ga.o. Thua <sup>^</sup> .t ngu+~ va' ?i.nh nghi~a	Rice. Terms and definitions
67.080.10	5608:1991	?o <sup>^</sup> ho <sup>^</sup> .p qua?. Xa la't qua? nhie <sup>^</sup> .t ?o+ <sup>i</sup>	Canned fruits. Tropical fruit salads
235	4545:1994	To <sup>^</sup> m hu <sup>^</sup> m ?o <sup>^</sup> ng la.nh	Frozen spiny lobster
243	7050:2002	Thi.t che <sup>^</sup> bie <sup>^</sup> n kho <sup>^</sup> ng qua xu+? ly' nhie <sup>^</sup> .t. Quy ?i.nh ky~ thua <sup>^</sup> .t	Non-heat treated processed meat. Specification
245	4359:2008	Bo <sup>^</sup> .t mi <sup>^</sup>	Wheat flour
247	7036:2008	Ha.t tie <sup>^</sup> u ?en (Piper Nigrum L.). Quy ?i.nh ky~ thua <sup>^</sup> .t	Black pepper (piper nigrum L.). Specification
248	4334:2007	Ca' phe <sup>^</sup> va' sa?n pha <sup>^</sup> ?m ca' phe <sup>^</sup> . Thua <sup>^</sup> .t ngu+~ va' ?i.nh nghi~a	Coffee and coffee products. Vocabulary
249	6346:1998	Pho+? a(n lie <sup>^</sup> n	Instant pho
256	5538:1991	Su+~a bo <sup>^</sup> .t. Ye <sup>^</sup> u ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Powdered milk. Specifications
258	3140-86	Ha <sup>^</sup> nh ta <sup>^</sup> y xua <sup>^</sup> t kha <sup>^</sup> ?u	Onion for export
262	7401:2004	Tie <sup>^</sup> u chua <sup>^</sup> ?n chung ?o <sup>^</sup> i vo+ <sup>i</sup> phomat	General standard for cheese
263	5777:2004	Mi <sup>^</sup> a(n lie <sup>^</sup> n	Instant noodles
268	7809:2007	To?i ta <sup>^</sup> y kho <sup>^</sup> . Ca'c ye <sup>^</sup> u ca <sup>^</sup> u	Dehydrated garlic (Allium sativum L.). Specification
271	5644:1992	Ga.o. Ye <sup>^</sup> u ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Rice. Specification
285	7524:2006	Ca' ?o <sup>^</sup> ng la.nh nhanh	Quick frozen finfish uneviscerated and eviscerated
293	6929:2007	Ca' phe <sup>^</sup> nha <sup>^</sup> n. Hu+o+ <sup>^</sup> ng da <sup>^</sup> ~n phu+o+ <sup>^</sup> ng pha'p mo <sup>^</sup> ta? ye <sup>^</sup> u ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Green coffee. Guidelines on methods of specification
294	7402:2004	Kem thu+ <sup>c</sup> pha <sup>^</sup> ?m. Ye <sup>^</sup> u ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Edible ices cream. Technical requirements
295	6348:1998	Mie <sup>^</sup> n a(n lie <sup>^</sup> n	Instant mien



304	5267-1:2008	Ma <sup>^</sup> .t ong. Pha <sup>^</sup> n 1: Sa <sup>?</sup> n pha <sup>^</sup> ?m ?a~ che <sup>^</sup> bie <sup>^</sup> n va <sup>^</sup> su+? du.ng tru+.c tie <sup>^</sup> p	Honey. Part one: Processed and intended for direct consumption products
308	7042:2002	Bia ho+i. Quy ?i.nh ky~ thua <sup>^</sup> .t	Draught beer. Specification
311	6430:1998	Ma <sup>^</sup> .n ho <sup>^</sup> .p	Canned plums
315	7968:2008	?u+o+`ng	Sugars
322	5251-90	Ca <sup>^</sup> phe <sup>^</sup> bo <sup>^</sup> .t. Ye <sup>^</sup> u ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Ground coffee. Specifications
324	4800-1989	Bo <sup>^</sup> .t ca <sup>^</sup> . Thua <sup>^</sup> .t ngu+~ va <sup>^</sup> ?i.nh nghi~a	Fish powder. Terms and definitions
333	7030:2009	Su+~a le <sup>^</sup> n men	Fermented milks
334	7046:2002	Thi.t tu+o+i. Quy ?i.nh ky~ thua <sup>^</sup> .t	Fresh meat. Specification
335	6027:1995	Bo <sup>^</sup> .t mi <sup>^</sup> . ?a(.c ti'nh va <sup>^</sup> .t ly' cu?a kho <sup>^</sup> i bo <sup>^</sup> .t nha'o. Xa'c ?i.nh ?a(.c ti'nh lu+u bie <sup>^</sup> n ba(`ng bie <sup>^</sup> ?u ?o <sup>^</sup> alveograph	Wheat flour. Physical characteristics of doughs. Determination of rheological properties using an alveograph
342	3591-1988	Rong ca <sup>^</sup> u	Agar
349	3974-84	Muo <sup>^</sup> i a(n. Ye <sup>^</sup> u ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Kitchen salt. Specification
352	188-66	?o <sup>^</sup> ho <sup>^</sup> .p thi.t. Thi.t lo+.n ha <sup>^</sup> p	Canned meat. Stewed pork
363	3693-81	Ca' nu+o+'c ngo.t. Ca' hu+o+ng. Ye <sup>^</sup> u ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Fresh water fish. Larvules. Specification
366	1763:2008	Nu+o+'c tu+o+ng	Soy sauce
371	1871-88	Du+'a qu?a tu+o+i	Fresh pineapple
372	1871:2007	Du+'a qua? tu+o+i	Pineapples
373	3694-81	Ca' nu+o+'c ngo.t. Ca' gio <sup>^</sup> ng. Ye <sup>^</sup> u ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Fresh water fish. Breed fishes. Specification
377	7044:2009	Ru+o+.u mu'i. Quy ?i.nh ky~ thua <sup>^</sup> .t	Liqueur. Specification
382	168-1991	?o <sup>^</sup> ho <sup>^</sup> .p rau. Du+a chuo <sup>^</sup> .t da <sup>^</sup> m da <sup>^</sup> m	Canned vegetables. Cucumber pickles
384	7105:2002	Mu+.c o <sup>^</sup> ng ?o <sup>^</sup> ng la.nh nhanh	Quick frozen raw squid
385	7714:2007	Thu+.c pha <sup>^</sup> ?m che <sup>^</sup> bie <sup>^</sup> n tu+` ngu~ co <sup>^</sup> c da`nh cho tre? so+ sinh va` tre? nho?	Codes standard for processed cereal-based foods for infants and young children
386	7265:2003	Quy pha.m thu+.c ha`nh ?o <sup>^</sup> i vo+'i ?o <sup>^</sup> .ng va <sup>^</sup> .t cha <sup>^</sup> n ?a <sup>^</sup> u	Code of practice for cephalopods
388	5305-91	Ca` chua co <sup>^</sup> ?a(.c	Tomato concentrates
393	5860:2007	Su+~a tu+o+i thanh tru`ng	Pasteurized fresh milk
395	4043-85	?o <sup>^</sup> ho <sup>^</sup> .p nu+o+'c qu?a. Nu+o+'c ?u ?u? pha ?u+o+`ng	Canned fruit juices. Papaya juice with sugar
396	5613:1991	Che`. Phu+o+ng pha'p xa'c ?i.nh ?o <sup>^</sup> . a <sup>^</sup> ?m	Tea. Determination of moisture content
402	6298:1997	Hu+o+ng da <sup>^</sup> ~n cho nu+o+'c qua? ho <sup>^</sup> ~n ho+.p	Guidelines for mixed fruit juices
403	5540:1991	Sa <sup>?</sup> n pha <sup>^</sup> ?m su+~a bo <sup>^</sup> .t ?a(.c bie <sup>^</sup> .t du`ng cho tre? so+ sinh va` co`n nho? tuo <sup>^</sup> ?i. Ye <sup>^</sup> u ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Special powdered milk for babies and infants. Specifications
406	7266:2003	Quy pha.m thu+.c ha`nh ?o <sup>^</sup> i vo+'i thuy? sa <sup>?</sup> n ?o <sup>^</sup> ng ho <sup>^</sup> .p	Code of practice for canned fish
408	7523:2005	Qua? thanh long	Dragon fruit
410	6299:1997	Hu+o+ng da <sup>^</sup> ~n cho necta qua? ho <sup>^</sup> ~n ho+.p	Guidelines for mixed fruit nectars
412	2644:1993	Mu+.c ?o <sup>^</sup> ng la.nh. Ye <sup>^</sup> u ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Frozen cuttles and squids. Technical requirements
413	5000:2007	Xu'p lo+. Hu+o+ng da <sup>^</sup> ~n ba?o qua?n va` va <sup>^</sup> .n chuye <sup>^</sup> ?n la.nh	Cauliflowers. Guide to cold storage and refrigerated

			transport
415	7406:2004	Ba'nh ngo.t kho^ng kem. Ye^u ca^u ky~ thua^t	Non-cream sweet cake. Technical requirements
421	1459-74	Mi` chi'nh-Natri glutamat 80%. Ye^u ca^u ky~ thua^t	80%monosodium glutamate. Specification
424	1648-75	Ha.t gio^ng la.c. Pha^n ca^p cha^t lu+o+.ng va` ye^u ca^u ky~ thua^t	Peanut seeds. Quality gradarion and specification
430	1275-72	Ru+o+.u ca` phe^l. Ye^u ca^u ky~ thua^t	Coffee liquor. Specification
431	7043:2002	Ru+o+.u tra('ng. Quy ?i.nh ky~ thua^t	Distilled alcoholic beverages. Specification
432	7045:2009	Ru+o+.u vang. Quy ?i.nh ky~ thua^t	Wine. Specification
436	7028:2009	Su+~a tu+o+i tie^t tru`ng	Sterilized fresh milk
439	6958:2001	?u+o+`ng tinh luye^l.n	Refined sugar
440	7804:2007	Sa?n pha^?m rau, qua?. Xa'c ?i.nh cha^t ra('n kho^ng tan trong nu+o+'c	Fruit and vegetable products. Determination of water-insoluble solids
441	6047:1995	Da^u la.c thu+.c pha^?m (da^u ?a^u pho^l.ng)	Edible arachis oil
442	7247:2008	Thu+.c pha^?m chie^u xa.. Ye^u ca^u chung	General requirements for irradiated foods
446	6389:1998	Thi.t cua ?o'ng ho^l.p	Codex standard for canned crab meat
448	7405:2004	Su+~a tu+o+i nguye^l.n lie^l.u. Ye^u ca^u ky~ thua^t	Raw fresh milk. Technical requirements
453	6390:1998	Ca' tri'ch va` ca'c sa?n pha^?m da.ng ca' tri'ch ?o'ng ho^l.p	Canned sardines and sardine-type products
454	3243-79	Hom che` gio^ng PH1	PH1 tea cuttings
457	2815-78	?o^l ho^l.p nu+o+'c qu?a. Nu+o+'c chanh tu+. nhie^l.n	Canned fruit juices. Natural lemon juice
460	4042-85	?o^l ho^l.p nu+o+'c qu?a. Nu+o+'c ma~ng ca^u pha ?u+o+`ng	Canned fruit juices. Custard apple juice with sugar
469	1763-86	Nu+o+'c cha^m. Ye^u ca^u ky~ thua^t	'Nuoc cham' sauce. Specifications
470	7044:2002	Ru+o+.u mu`i. Quy ?i.nh ky~ thua^t	Liqueur. Specification
471	7028:2002	Su+~a tu+o+i tie^t tru`ng. Quy ?i.nh ky~ thua^t	Sterilized fresh milk. Specification
473	5107:1993	Nu+o+'c ma('m	Fermented fish sauce
474	4041-85	?o^l ho^l.p nu+o+'c qu?a. Nu+o+'c xoa'i pha ?u+o+`ng	Canned fruit juices. Mango juice with sugar
482	3251-79	Ca' bie^?n u+o+'p muo^i la`m chu+o+.p	Salted salt-water fishes for manufacturing of half-salted products
483	7108:2002	Su+~a bo^t da`nh cho tre? ?e^l.n 12 tha'ng tuo^?i. Quy ?i.nh ky~ thua^t	Dried milk for infants up-to 12 months age. Specification
486	3219-79	Co^ng nghe^l. che^l bie^l.n che`. Thua^t ngu+~ va` ?i.nh nghi~a	Tea processing technology. Terms and definitions
489	6386:1998	Ca' ho^l.i ?o'ng ho^l.p	Canned salmon
492	5009:2007	To?i. Ba?o qua?n la.nh	Garlic. Cold storage
496	6388:1998	Ca' ngu+` ?o'ng ho^l.p	Canned tuna and bonito
497	7029:2002	Su+~a hoa`n nguye^l.n tie^t tru`ng. Quy ?i.nh ky~ thua^t	Sterilized reconstituted milk. Specification
501	5526:1991	Nu+o+'c ma('m. Chi? tie^u vi sinh	Fermented fish sauce (Nuoc mam). Microbiological

			characteristics
502	5651:1992	Mu+.c kho^ xua^t kha^?u. Ye^u ca^u ky~ thua^.t	Dried squids for export. Specification
503	7049:2002	Thi.t che^' bie^'n co' xu+? ly' nhie^'.t. Quy ?i.nh ky~ thua^.t	Heat treated processed meat. Specification
505	5503-91	Thi.t bo` la.nh ?o^ng	Frozen beef
517	5644:2008	Ga.o tra^ng. Ye^u ca^u ky~ thua^.t	White rice. Specifications
518	4067:1985	Ke.o. Phu+o+ng pha'p la^y ma^~u	Confectionery. Sampling methods
519	1695-87	?u+o+`ng tinh luye^'.n va` ?u+o+`ng ca't tra^ng. Ye^u ca^u ky~ thua^.t	Refined and white sugars. Specifications
523	6297:1997	Tie^u chua^?n chung cho nu+o+c qua? ?u+o+c ba?o qua?n chi? ba^ng ca'c bie^'.n pha'p va^'.t ly' ne^'u kho^ng co' ca'c tie^u chua^?n rie^ng	General standard for fruit juices preserved exclusively by physical means not covered by individual standards
525	5538:2002	Su+~a bo^'.t. Quy ?i.nh ky~ thua^.t	Milk powder. Specification
528	7036:2002	Ha.t tie^u ?en (piper nigrum L.).Quy ?i.nh ky~ thua^.t	Black pepper (piper nigrum L.). Specification
530	5607:1991	?o^ ho^'.p qua?. Qua? ho^~n ho+.p	Canned fruits. Fruits cocktails
531	7879:2008	Sa?n pha^?m ngu~ co^c da.ng so+.i a(n lie^'.n	Instant noodles
534	6347:1998	Bu'n kho^ a(n lie^'.n	Instant rice vermicelli
538	5644:1999	Ga.o tra^ng. Ye^u ca^u ky~ thua^.t	White rice. Specifications
541	7041:2009	?o^ uo^ng kho^ng co^'.n. Quy ?i.nh ky~ thua^.t	Soft drinks. Specification
551	3974:2007	Muo^'i thu+.c pha^?m	Food grade salt
555	1454:1993	Che` ?en ro+`i. ?ie^'u kie^'.n ky~ thua^.t	Black tea. Specifications
556	3696-81	Ca' nu+o+c ngo.t. Ca' thi.t	Fresh water fishes. Food fishes
560	7975:2008	Che` tha?o mo^'.c tu'i lo.c	Herbal tea in bag
561	4809-89	Xie^'n la^y ma^~u ca` phe^ nha^'n	Coffee triers
565	4849:1989	?o^~ tu+o+ng. Ye^u ca^u ky~ thua^.t	Soya-bean. Specifications
576	6057:1995	Bia ho^'.p. Ye^u ca^u ky~ thua^.t	Canned beer. Specifications
577	5835:1994	To^m thi.t ?o^ng la.nh IQF xua^t kha^?u	Individual quick frozen peeled shrimps for export
580	6057:2009	Bia. Quy ?i.nh ky~ thua^.t	Beer. Specification
583	1274-72	Ru+o+.u chanh. Ye^u ca^u ky~ thua^.t	Lemon liquor. Specification
590	5288-90	To^m gio^ng. Ye^u ca^u ky~ thua^.t	Breed shrimps (postlosval). Specification
596	4187-86	Ke.o chuo^'i xua^t kha^?u	Banana bonbon for export
598	7808:2007	Ha`nh ta^y kho^'. Ca'c ye^u ca^u	Dehydrated onion (Allium cepa Linnaeus). Specification
601	6389:2003	Thi.t cua ?o^ng ho^'.p	Canned crab meat
602	7240:2003	Ba`nh ?a^'.u xanh	Green bean cake
603	6392:2002	Ca' xay che^' bie^'n hi`nh que, ca' ca'(t mie^ng va` ca' phile ta^?m bo^'.t xu` hoa(.c bo^'.t nha~o ?o^ng la.nh nhanh	Quick frozen fish sticks (fish finger), fish portions and fish fillets - breaded or in batter
604	7404:2004	Su+~a bo^'.t ga^y. Ye^u ca^u ky~ thua^.t	Skimmed milk powder. Technical requirements
613	2383:1993	La.c qua? va` la.c ha.t. Pha^'n ha.ng cha^t lu+o+ng	Peanuts in shell and peanut kernels. Quality classification

621	4782-89	Rau qu?a tu+o+i. Danh mu.c chi? tie^u cha^t lu+o+.ng	Fresh vegetables and fruits. List of quality characteristics
623	5777:1994	Mi` a(n lie^`n	Instant noodle
626	2830-79	Thi.t lo+.n. Pha lo.c va` pha^`n ha.ng trong thu+o+ng nghie^`.p ba'n le?	Pork. Cutting and sorting for retail trade
634	5652:1992	Mu+.c tu+o+i	Fresh squids and cuttles
638	5107:2003	Nu+o+^c ma('m	Fish sauce
639	6387:2006	To^m ?o'ng ho^`.p	Canned shrimps or prawns
640	5147-1990	Thi.t va` sa?n pha^?m cu?a thi.t. Phu+o+ng pha?p xa'c ?i.nh du+ lu+o+.ng penixilin	Meat and meat products. Determination of penicillin residues
641	4191-86	Ru+o+.u Thanh mai xua^t kha^?u. Ye^u ca^`u ky~ thua^t	Apricot liquor for export. Specifications
643	5089-90	Ba?o qua?n ngu~ co^c va` ?a^u ?o^~. Ye^u ca^`u co+ ba?n	Storage of cereals and pulses. Basic requirements
644	7043:2009	Ru+o+.u tra('ng. Quy ?i.nh ky~ thua^t	White spirit. Specification
645	7110:2008	To^m hu`m ?o'ng la.nh nhanh	Quick frozen lobsters
650	6046:1995	Da^`u ha.t hoa hu+o+ng du+o+ng thu+.c pha^?m	Edible sunflowerseed oil
658	7041:2002	?o^` uo^ng pha che^` sa(~n kho^ng co^`n. Quy ?i.nh ky~ thua^t	Soft drinks. Specification
659	4813-89	Mu+.c tu+o+i. Xe^p loa.i theo gia' tri. su+? du.ng	Fresh squids and cuttles. Classification for use
660	7400:2004	Bo+. Ye^u ca^`u ky~ thua^t	Butter. Technical requirements
661	5322:1991	Na^m a(n va` sa?n pha^?m na^m a(n	Edible fungi and fungus products
667	4334:2001	Ca` phe^` va` ca'c sa?n pha^?m cu?a ca` phe^`. Thua^t ngu+~ va` ?i.nh nghi~a	Coffee and its products. Vocabulary
669	7946:2008	Nu+o+^c qua? va` nectar	Fruit juices and nectars
671	1442-1986	Tru+ng vi.t tu+o+i. Thu+o+ng pha^?m	Fresh duck eggs
677	5108-90	Che^` bie^`n to^m. ?ie^`u kie^`.n ky~ thua^t va` ve^`. sinh	Shrimps processing. Specification and hygienic requirements
678	7974:2008	Che` (Camellia sinensis) (L.) O. Kuntze) tu'i lo.c	Tea (Camellia sinensis) (L.) O. Kuntze) in bag
683	6048:1995	Da^`u co. thu+.c pha^?m	Edible palm oil
684	4850:1998	Nha^`n ha.t ?ie^`u	Cashew kernal
685	7397:2004	Tu+o+ng o+t. Ye^u ca^`u ky~ thua^t	Chilli sauce. Technical requirements
688	6096:2004	Nu+o+^c uo^ng ?o'ng chai	Bottled/packageged drinking waters
696	4995:2008	Ngu~ co^c. Thua^t ngu+~ va` ?i.nh nghi~a	Cereals. Vocabulary
706	6959:2001	?u+o+`ng tra('ng	White sugar
709	6049:2007	Bo+ thu+.c va^t	Margarin
710	5109-90	To^m ?o'ng la.nh nhanh	Quick frozen shrimps or prawns
715	7045:2002	Ru+o+.u vang. Quy ?i.nh ky~ thua^t	Wine. Specification
716	5250-90	Ca` phe^` rang. Ye^u ca^`u ky~ thua^t	Roasted coffee. Specifications
717	6310:1997	Da^`u ha.t bo^ng thu+.c pha^?m	Edible cottonseed oil
718	6388:2006	Ca' ngu+` ?o'ng ho^`.p	Canned tuna and bonito
719	7597:2007	Da^`u thu+.c va^t	Vegetable oils

727	5289:1992	To^m mu+.c ?o^ng la.nh. Ye^u ca^u vi sinh	Frozen shrimps and cuttles (or squids). Microbiological requirements
728	5371-91	Mo+~ lo+.n ra'n	Rendered pork fat
734	1858-1986	Tru+'ng ga` tu+o+i thu+o+ng pha^?m	Fresh chicken eggs
747	187:2007	Du+a ho^.p	Canned pineapple
748	6459:1998	Phu. gia thu+.c pha^?m. Pha^?m ma`u Riboflavin	Food additive. Riboflavin
751	7396:2004	Bo^.t canh gia vi.. Ye^u ca^u ky~ thua^.t	Spicing salt powder. Technical requirements
754	4843:2007	Qua? kho^ va` qua? sa^y kho^. ?i.nh nghi~a va` te^n go.i	Dry fruits and ?rie fruits. Definitions and nomenclature
762	3806-83	?o^ ho^.p qu?a. Cho^m cho^m nu+o+'c ?u+o+'ng	Canned fruits. Rambutan in syrup
765	5370-91	Nu+o+'c khoa'ng ?o'ng chai	Bottled mineral waters
769	5258:2008	Ngo^ (ha.t)	Maize (Corn)
770	7519:2005	Ha.t cacao	Cocoa beans
771	2637:1993	Da^u thu+.c va^.t. Phu+o+ng pha'p xa'c ?i.nh ta.p cha^t kho'ng tan	Vegetable oils. Determination of insoluble impurities content
772	5650:1992	To^m no~n kho^ xua^t kha^?u. Ye^u ca^u ky~ thua^.t	Dried peeled shrimps for export. Specification
773	6044:1995	Mo+~ lo+.n ra'n	Rendered pork fat
774	4193:1993	Ca` phe^ nha^n. Ye^u ca^u ky~ thua^.t	Green coffee. Specifications
780	2623-78	Ru+o+.u gu+'ng 40o. Ye^u ca^u ky~ thua^.t	40o ginger liquor. Specification
783	7268:2003	?u+o+'ng. Thua^.t ngu+~ va` ?i.nh nghi~a	Sugar. Terms and definitions
786	4193:2001	Ca` phe^ nha^n. Ye^u ca^u ky~ thua^.t	Green coffee. Specification
787	3250-88	Ca' bie^?n tu+o+i. Pha^n loa.i theo gia' tri. su+? du.ng	Fresh salt-water fishes. Classification for use
788	2080:2007	o+'t chilli va` o+'t capsicum, nguye^n qua? hoa(.c xay (da.ng bo^.t). Ca'c ye^u ca^u	Chillies and capsicums, whole or ground (powdered). Specification
791	1455:1993	Che` xanh. ?ie^u kie^.n ky~ thua^.t	Green tea. Specifications
796	6045:1995	Da^u vu+'ng thu+.c pha^?m (Da^u me`)	Edible sesame seed oil
798	4334-86	Ca` phe^ va` ca'c sa?n pha^?m cu?a ca` phe^. Thua^.t ngu+~ va` ?i.nh nghi~a	Coffee and coffee products. Terms and definitions
812	5258-90	Ngo^ (Ha.t)	Maize (Corn)
813	6312:1997	Da^u o^liu chu+a tinh che^, tinh che^ va` da^u o^liu, tinh che^ ba(`ng phu+o+ng pha'p tri'ch ly	Olive oil, virgin and refined, and refined olive-pomace oil
816	6462:1998	Phu. gia thu+.c pha^?m. Pha^?m ma`u Erythrosin	Food additive. Erythrosine
817	7267:2003	Kho^i ca' phile^, thi.t ca' xay va` ho^~n ho+.p ca' phile^ vo+'i thi.t ca' xay ?o^ng la.nh nhanh	Quick frozen blocks of fish fillet, minced fish flesh and mixtures of fillets and minced fish flesh
818	4546:1994	To^m mu~ ni ?o^ng la.nh	Frozen slipper lobster
819	3295-1980	Sa?n xua^t ?u+o+'ng glucoza-ma^.t tinh bo^.t. Thua^.t ngu+~ va` ?i.nh nghi~a	Syrup-dextrose production. Terms and definitions
826	2064-77	To^m ?o^ng la.nh (u+'o+p ?o^ng). Ye^u ca^u ky~ thua^.t	Frozen shrimps. Specification

830	5836:1994	To <sup>m</sup> thi.t lu <sup>o</sup> .c chi'n ? <sup>o</sup> ng la.nh xua <sup>t</sup> kha <sup>?</sup> u	Frozen peeled and cooked shrimps for export
831	7403:2004	Thu+ <sup>c</sup> a(n da <sup>n</sup> h cho tre? em tu+` 6 tha <sup>ng</sup> ? <sup>e</sup> n 36 tha <sup>ng</sup> tuo <sup>?</sup> i. Ye <sup>u</sup> ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Foods intended for use for children from 6 months up to 36 months of age. Technical requirements
834	5860:1994	Su+~a thanh tru`ng	Pasteurized milk
835	6463:1998	Phu. gia thu+.c pha <sup>?</sup> m. Cha <sup>t</sup> ta.o ngo.t. Kali sacarin	Food additive. Potassium saccharin
836	6390:2006	Ca' tri'ch va` ca'c sa?n pha <sup>?</sup> m ca' tri'ch ? <sup>o</sup> ng ho <sup>^</sup> .p	Canned sardines and sardine-type products
842	7110:2002	To <sup>m</sup> hu`m ? <sup>o</sup> ng la.nh nhanh	Quick frozen lobsters
843	1575-74	? <sup>o</sup> ho <sup>^</sup> .p thi.t. Thi.t ga` ha <sup>^</sup> m nguye <sup>n</sup> xu+o+ng	Canned meat. Stewed chicken
846	6345:1998	Hu? tie <sup>u</sup> a(n lie <sup>n</sup>	Oriental style instant noodle
848	6312:2007	Da <sup>^</sup> u o <sup>liu</sup> va` da <sup>^</sup> u ba~ o <sup>liu</sup>	Olive oils and olive pomace oils
849	4359:1996	Bo <sup>^</sup> .t mi`	Wheat flour
851	5251:2007	Ca` phe <sup>^</sup> bo <sup>^</sup> .t	Ground coffee
853	7042:2009	Bia ho+i. Quy ?i.nh ky~ thua <sup>^</sup> .t	Draught beer. Specification
856	6387:1998	To <sup>m</sup> ? <sup>o</sup> ng ho <sup>^</sup> .p	Canned shrimps or prawns
858	1521-86	? <sup>o</sup> ho <sup>^</sup> .p qu?a. Chuo <sup>^</sup> i tie <sup>u</sup> nu+o+ <sup>c</sup> ?u+o+ <sup>ng</sup> . Ye <sup>u</sup> ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Canned fruits. Bananas in syrup. Specifications
860	377-70	Ru+o+ <sup>u</sup> Lu'a mo+ <sup>i</sup> . Ye <sup>u</sup> ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	'Lua moi' alcohol (rice vodka). Specification
869	4784-89	Thi.t la.nh ? <sup>o</sup> ng. Danh mu.c chi? tie <sup>u</sup> cha <sup>t</sup> lu+o+ <sup>ng</sup>	Frozen meat. List of quality characteristics
872	7030:2002	Su+~a chua. Quy ?i.nh ky~ thua <sup>^</sup> .t	Yoghurt. Specification
874	3141-86	To?i cu? xua <sup>t</sup> kha <sup>?</sup> u	Garlic bulbs for export
875	6095:2008	Ha.t lu'a mi` (Triticum aestivum L.). Ca'c ye <sup>u</sup> ca <sup>^</sup> u	Wheat (Triticum aestivum L.). Specification
880	4381:1992	To <sup>m</sup> vo? ? <sup>o</sup> ng la.nh. Ye <sup>u</sup> ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Unpeeled frozen shrimps. Specifications
882	1578:2007	Cam quy <sup>t</sup> ho <sup>^</sup> .p	Canned mandarin oranges
886	6311:1997	Da <sup>^</sup> u du+`a thu+.c pha <sup>?</sup> m	Edible coconut oil
891	5305:2008	Ca` chua co <sup>^</sup> ?a(c	Processed tomato concentrates
893	5450-91	? <sup>o</sup> ho <sup>^</sup> .p thi.t. Thi.t trong nu+o+ <sup>c</sup> xo <sup>t</sup> thi.t. Ye <sup>u</sup> ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Canned meat. Meat in sauce. Specifications
894	1870-76	? <sup>o</sup> ho <sup>^</sup> .p qu?a. Mu+ <sup>t</sup> cam. Ye <sup>u</sup> ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Canned fruits. Orange marmalade. Specifications
895	4192-86	Ru+o+ <sup>u</sup> Hu+o+ <sup>ng</sup> chanh 40o xua <sup>t</sup> kha <sup>?</sup> u. Ye <sup>u</sup> ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	40o lemon liquor for export. Specification
897	2065-77	Ca' phi le <sup>^</sup> ? <sup>o</sup> ng la.nh (u+o+ <sup>p</sup> ? <sup>o</sup> ng). Ye <sup>u</sup> ca <sup>^</sup> u ky~ thua <sup>^</sup> .t	Frozen fish fillets. Specifications
898	3220-79	? <sup>o</sup> ho <sup>^</sup> .p su+~a. Danh mu.c ca'c chi? tie <sup>u</sup> cha <sup>t</sup> lu+o+ <sup>ng</sup>	Canned milk. List of quality characteristics
899	4186-86	To <sup>m</sup> va` mu+.c ? <sup>o</sup> ng la.nh. Chi? tie <sup>u</sup> vi sinh va <sup>^</sup> .t	Frozen shrimps and cuttles. Microbiological characteristics
903	4039-85	Du+ <sup>a</sup> la.nh ? <sup>o</sup> ng	Frozen pineapple
909	6175:1996	Thuy? sa?n kho <sup>^</sup> . Mu+.c, ca' kho <sup>^</sup> ta <sup>?</sup> m gia vi. a(n lie <sup>n</sup>	Dried fishery products. Seasoned squid and fish ready to eat
913	3578:1994	Sa(n kho <sup>^</sup>	Dried manioc
915	4844:2007	Du+a chuo <sup>^</sup> .t tu+o+i	Cucumbers

919	3244-79	Ca'y che` ca`nh. Ye^u ca^u ky~ thua^t va` phu+o+ng pha'p thu+?	Tea plants. Specification and test methods
921	4380:1992	To^m thi.t ?o^ng la.nh. Ye^u ca^u ky~ thua^t	Peeled frozen shrimps. Specifications
923	6386:2003	Ca' ho^i ?o'ng ho^p	Canned salmon
927	2624-78	Ru+o+.u quy't. Ye^u ca^u ky~ thua^t	Mandarin liquor. Specification
929	5539:1991	Su+~a ?a(.c co' ?u+o+`ng. Ye^u ca^u ky~ thua^t	Sweetened condensed milk. Specifications
930	5605:1991	?o^ ho^p rau. Ca` chua ?o'ng ho^p	Canned vegetables. Canned tomatoes
939	1576-74	?o^ ho^p thi.t. Thi.t vi.t ha^m nguye^ n xu+o+ng	Canned meat. Stewed duck
940	6049:1995	Bo+ thu+.c va^t	Margarine
945	7029:2009	Su+~a hoa`n nguye^ n tie^t tru`ng va` su+~a pha la.i tie^t tru`ng	Sterilized reconstituted milk and sterilized recombined milk
954	5109:2002	To^m bie^?n hoa(.c to^m nu+o+'c ngo.t ?o^ng la.nh nhanh	Quick frozen shrimps or prawns
955	6391:1998	Ca' ?o'ng ho^p	Canned finfish

### 3.5.6.5 Methods of Analysis for General Foods

Methods of analysis for general foods are shown in **Table 3.5-A5**. Methods of analysis for the food categories taken up in the Case Study are described in the charts under the tables for the standards for those food categories (**Tables 3.5-30, 3.5-31 and 3.5-32**), respectively.

### 3.5.6.6 Case Study

#### (1) Instant Noodles

Regarding the food standards, those for cereal products instant noodles specified in TCVN 7879: 2008 are shown. As for the analysis item, only microbiological contaminant is described (the related regulations are uncertain) (**Table 3.5-30**).

#### (2) Soft Drinks

Regarding the food standards, those for soft drinks including fruits beverages and nectar beverages ready to drink without alcohol are shown (QCVN 6-2:2010/BYT). Those standards cannot be applicable for functional foods. As for the analysis item, only microbiological contaminant is described (QCVN 6-2:2010/BYT - National technical regulation) (**Table 3.5-31**).

#### (3) Prepared Frozen Foods

Regarding the food standards, those for frozen aquatic products (TCVN 5289: 2006) and frozen meats (TCVN 7047: 2002) are shown. As for the analysis item, only microbiological contaminant is described (**Table 3.5-32**).

**Table 3.5-A5 Methods of Analysis on General Foods**

<b>Related legislation</b>	<b>Item</b>	<b>Specification</b>	<b>Analytical Methods</b>	<b>Reference</b>
QCVN ... 2010/BYT National technical regulation on the safety limits of Microbiological contaminants in food	Microbiological contaminants			
TCVN 4832-89 List of contaminants and their maximum levels in food	Chemical contaminants			



**Table 3.5-30 Case Study 1 Instant Noodles**

<b>Standard</b>	<b>TCVN 7879: 2008</b>
<b>Item</b>	
Name of the Standard	Instant noodles
Scope	Cereal products instant noodles
Description	Wheat flour, cereal powder, others are used, added with or without added optional ingredients
Essential Composition and Quality Factor	Basic ingredients: wheat flour, cereal powder, others; portable water
	General requirements:
	Moisture content: <= 10% for fried products; <=14% for non-fried products
	Acidity index: <= 2 mg KOH/g oil (applied for fired products)
Food additives	In accordance to the Codex Alimentarius Commission (Codex Stan 249 : 2006)
	Permitted food additives to be used
	Acid regulator
	Antioxidant
	Colours
	Flour treatment agent
	Stabilizer
	Chat lam day
	Chat tao nhu
	Preservatives
Chat giu am	
Contaminant	In accordance to the Codex Alimentarius Commission (Codex Stan 193 : 1995)
Package and wrapping	Packaged in hygiene wrapping, nutrition, characteristics of perceptibles and technologies of products
	Package and materials of packages must be made from safe materials and suitable to used goal. Package must be not transmissible toxic substances or odour or undesired odour in products
Hygiene	in accordance to TCVN 5603:2008 (Cac/RCP 1-1969; Rev. 4-2003) Guideline for practical general principles to food hygiene and the other related as Codex
	Bacteria in products must be complied with microbiology standard established to CAC/GL 21-1997 - Principles to establishing and application microbiology standard in food

Labeling	The products of this standard must be labeled according to TCVN 7087: 2008 (Codex Stan 1-2005) Food labelling for packaged products
	Name of products
	Name of products must be labeled "Instant noodles" or "Instant noodles with fry" or "Instant noodles without fry"
	Labeling for "HALAL" products
	When claiming "HALAL" food in instant noodles product's label, it must be complied with Codex CAC/GL 24-1997; General Guidelines for Using Hala's terminology
Methods of analysis and sampling	Method sampling - shall be in accordance with the CAC/GL 50-2004 General Guidelines for sampling
	Determination of moisture - according to TCVN 7879:2008
	Determination of free oil - according to TCVN 7879:2008
	Determination of acidity index - according to TCVN 7879:2008

#### <Methods of Analysis> Instant Noodles

Related legislation	Item	Specification	Analytical Methods	Reference
	Bacteria	10,000/q	ISO 4833: 1991	EU, Australia
	Coliforms	10/q	ISO 4832: 1991	
	<i>E. coli</i>	3	ISO 7251: 1993	
	<i>S. aureus</i>	10/q	ISO 6883: 1983	
	<i>Cl. perfringens</i>	10/q	ISO 7937: 1985	
	<i>Bacillus cereus</i>	10/q	ISO 7932: 1987	
	Salmonella	Negative	ISO 6579:1983	
	Yeasts and moulds	100/q	ISO 7954: 1987	

**Table 3.5-31 Case Study 2 Soft Drinks**

<b>Standard</b>	<b>QCVN 6-2:2010/BYT</b>		
<b>Item</b>			
Name of the Standard	National technical regulation for soft drinks		
Scope	This national technical regulate the food safety standard items ans management demands for soft drinks products including: fruits beverages, necta beverages, ready to drink without alcolhol. This national technical is non-applicable for functional food		
Description			
Essential Composition and Quality Factor	Demand of water's quality of soft drink, it is suitable to QCVN 01:2009/BYT of quality of water, issued in accordance to regulation No 04/2009/TT-BYT dated on 17/6/2009 by Minister of Health		
	Demand of food safety of soft drink products		
Contaminants		<b>MRLs</b>	<b>Methods of analysis</b>
Heavy metal	Plomb (Pb) (mg/l)	0.05	TCVN 8126: 2009
	Tin (Sn) (applied to canned products used Tin (mg/l)	150	TCVN 7769: 2007 (ISO 17240:2004); TCVN 7788:2007
Toxicology of micro-fungus	Patulin in apple breverages and nectar apple (mcg/l)	50	TCVN 8161:2009 (EN 14177:2003)
Pesticides residues	Frutis beverages (citrus)		
	Piperonyl butoxid (mg/l)	0.05	US FDA PAM, Vol.1, Section 302, E1/E4+C4
	Orange beverages and nectar		
	2-phenylphenol (mg/l)	0.5	US FDA PAM, Vol.1, Section 302, E1/E2
	Propargit (mg/l)	0.3	US FDA PAM, Vol.1, Section 302, E1/E2
	Apple beverages and nectar apple		
	Diphenylamin (mg/l)	0.5	US FDA PAM, Vol.1, Section 302, E1/E2
	Propargit (mg/l)	0.2	US FDA PAM, Vol.1, Section 302, E1/E2
	Grapes beverages and nectar grapes		
	Propargit (mg/l)	1	US FDA PAM, Vol.1, Section 302, E1/E2
	Tomoto beverages and nectar tomato		
	Carbaryl (mg/l)	3	TCVN 8171-1:2009 (EN 14185-1:2003)
	Malathion (mg/l)	0.01	AOAC 970.53
	Piperonyl butoxid (mg/l)	0.3	US FDA PAM, Vol.1, Section 302, E1/E4+C4
Microbiology	Total of plate counte (cfu/ml)	100	TCVN 4884 : 2005 (ISO 4833:2003)

	Coliforms (cfu/ml)	10	TCVN 6848 : 2007 (ISO 4832 : 2006); TCVN 4882 : 2007 (ISO 4831:2006)
	<i>E.coli</i> (cfu/ml)	Absent	TCVN 7924-1:2008 (ISO 16649-1:2001)
			TCVN 7924-2:2008 (ISO 16649-2:2001); TCVN 7924-3:2008 (ISO/TS 16649-3:2005)
	<i>Str.faecal</i> (cfu/ml)	Absent	TCVN 6189-2:1996 (ISO 7899-2:1984)
	<i>Ps.aeruginosa</i> (cfu/ml)	Absent	ISO 16266:2006
	<i>S.aureus</i> (cfu/ml)	Absent	TCVN 4830-1:2005 (ISO 6888-1:1999 with Amd.1:2003); TCVN 4830-2:2005 (ISO 6888-2:1999, with Amd.1:2003); TCVN 4830-3:2005 (ISO 6888-2:2003)
	<i>Cl.perfringens</i> (cfu/ml)	Absent	TCVN 4991:2005 (ISO 7937:2004)
	Total of Yeats and Mould (cfu/ml)	10	TCVN 8275-1:2009 (ISO 21527-1:2008)
Food additives	in according to regulation No 3742/2001 by Ministry of Health		
Labelling	Labelling of soft drink products must be followed regulation No 89/2006/ND-CP issued on 30/8/2006 by Government		
Sampling	Not specified		

### < Methods of Analysis > Soft Drinks

Related legislation	Item	Specification	Analytical Methods	Reference
QCVN 6-2:2010/BYT - National technical regulation for soft drink	Coliforms	10 cfu/ml	ISO 4832: 2006; ISO 4831: 2006	
	<i>E. coli</i>	No detective	ISO 16649-1:2001; ISO 16649-2:2001; ISO 16649-3:2005	
	<i>S. aureus</i>	No detective	ISO 6888-1:1999, with Amd. 1:2003); ISO 6888-2:1999, with Amd. 1:2003); ISO 6888-2:2003)	
	<i>Cl. perfringens</i>	No detective	ISO 7937: 2004	
	<i>S. faecal</i>	No detective	ISO 7899-2:1984	
	<i>Yeasts and moulds</i>	10 cfu/ml	ISO 21527-1:2008	
	<i>P.aeruginosa</i>	No detective	ISO 16266:2006	
	Total aerobic bacterial	100 cfu/ml	ISO 4833:2003	

**Table 3.5-32 Case Study 3 Prepared Frozen Foods**

<b>Standard</b>	<b>TCVN 5289 : 2006</b>		
<b>Item</b>			
Name of the Standard	Frozen aquatic products - Hygienic requirements		
Scope	applied to MRLs of histamine, heavy metal residues and microbiology in frozen aquatic products, used to food processing		
Description			
Essential Composition and Quality Factor			
Contaminants		<b>MRLs</b>	<b>Methods of analysis</b>
	Histamine (mg/kg)	100	Not specified
Heavy metal	Arsenic (mg/kg)	0.5	Not specified
	Plomb (mg/kg)		
	soft animals	1	Not specified
	other aquatic products	0.5	Not specified
	Mercury (mg/kg)		
	fish-eating (shark, tuna)	1	Not specified
	other aquatic products	0.5	Not specified
	Cadmium		
	Fish	0.1	Not specified
	Crustacean	0.5	Not specified
	soft animals	1	Not specified
	Microbiology	Total of plate count (cfu/g)	1,000,000
<i>E.coli</i> (cfu/g)		100	Not specified
<i>S.aureus</i> (cfu/g)		100	Not specified
<i>Cl.perfringens</i> (cfu/g)		100	Not specified
Salmonella (/25g)		0	Not specified
<i>V.parahaemolyticus</i> (cfu/g)		100	Not specified
Sampling	Not specified		

<b>Item \ Standard</b>	<b>TCVN 7047:2002 - Technical regulations</b>		
Name of the Standard	Frozen meat - Specification		
Scope	applied to cattle, poultry, bird meat, animals which are frozen and frozen preservation used as food		
Description	fresh meat is frozen and frozen preservation used as food at the temperature under -12 degree		
		<b>MRLs</b>	<b>Methods of analysis</b>
Technical requirements	Materials		
	Fresh meat		TCVN 7046 : 2002
	not permitted to use frozen meat		
Hygiene	pH	5.5 - 6.2	TCVN 4835 : 2002 (ISO 2917 : 1999)
	Hydro sunfure (Qualification)	negative	TCVN 3699 : 1990
	Ammoniac (mg/100g)	35	TCVN 3699 : 1990
Contaminants			
Heavy metal	Plomb (mg/kg)	0.5	TCVN 5151 : 19901
	Cadmium (mg/kg)	0.05	AOAC 945.58
	Mercury (mg/kg)	0.03	TCVN 5152 : 1990
Microbiology	Total of plate count (cfu/g)	1,000,000	TCVN 5667 : 1992
	<i>E.coli</i> (cfu/g)	100	TCVN 5155 : 1990
	Coliforms (cfu/g)	100	TCVN 4882 : 2001 (ISO 4831 : 1993)
	<i>Cl.perfringens</i> (cfu/g)	10	TCVN 4991 : 1989 (ISO 7937 : 1985)
	Salmonella (/25g)	0	TCVN 5153 : 1990 (ISO 6888 : 1993)
	<i>S.aureus</i> (cfu/g)	100	TCVN 5156 : 1990
	<i>B.cereus</i> (cfu/g)	100	TCVN 4992 : 1989
	<i>Cl.botulinum</i> (cfu/g)	0	AOAC 977.26
Pesticides residues	Cabaryl (mg/kg)	0	Not specified
	DDT (mg/kg)	0.1	Not specified
	2,4 D (mg/kg)	0	Not specified
	Lindan (mg/kg)	0.1	Not specified
	Triclophon (mg/kg)	0	Not specified
	Diclovos (mg/kg)	0	Not specified

	Diazinon (mg/kg)	0.7	Not specified
	Fenclophos (mg/kg)	0.3	Not specified
	Clopyrifos (mg/kg)	0.1	Not specified
	Cuomaphos (mg/kg)	0.2	Not specified
Hormone residues	Diethylstilbestrol (mg/kg)	0	Not specified
	Testosterol (mg/kg)	0.015	Not specified
	Estadiol (mg/kg)	0.0005	Not specified
Labelling	in accordance to Regulation of labelling circulated in nationwide and imported & exported food No 178/1999/QD-TTg		
Sampling	In accordance to Standard TCVN 4833-1:2002 (ISO 3100-1:1991) - Meat and meat products - Sampling and prepared testing samples - Part 1: Sampling and TCVN 4833-2:2002 (ISO 3100-2:1988) - Meat and meat products - Sampling and prepared testing sample - Part 2: Preparing of testing samples for micribiological tesing		

<Methods of Analysis> Prepared Frozen Foods

Related legislation	Item	Specification	Analytical Methods	Reference
Food Sanitation Act	Bacteria	<1,000,000 /g	ISO 4833: 1991	
	Coliforms	<100/g	ISO 4832: 1991	
	<i>E. coli</i>	<100/g	ISO 7251: 1993	
	<i>S. aureus</i>	<100/g	ISO 6883: 1983	
	<i>Cl. perfringens</i>	<100/g	ISO 7937: 1985	
	Salmonella	Negative	ISO 6579:1983	
	<i>V. parahaemolyticus</i>	<100/g		





### **3.6 Case Study (Milk Products)**

Section 3 (The Investigation Results for Each Country) includes detailed reports of analytical methods for General Standards, and Instant Noodles, Carbonated Soft Drinks and Prepared Frozen Foods as for case studies in Codex, Japan, Korea, China and Southeast Asia (Malaysia, Singapore, Philippines, Indonesia, Thailand and Vietnam).

In this part, as we have investigated on processed foods, such as Instant Noodles, Carbonated Soft Drinks and Prepared Frozen Foods, we added analytical methods for Milk Products in those countries which should be closer to fresh foods, taking them as examples for reference.

<Methods of Analysis> Milk

Japan

Related legislation	Item	Specification	Analytical Methods	Reference
Ministerial Ordinance on Milk and Milk Products Concerning Compositional Standards	Nonfat milk solids(%)	8.0%<	Calculated by subtraction of the amount of milk fat % from the amount of the material % dried until a constant weight % at 98-100°C	Ministerial Ordinance on Milk and Milk Products Concerning Compositional Standards
	Milk fat (%)	3.0%<	The frequency of fat layer is expressed as the amount of fat % by operating of the Gerber lactobutyrometer etc.	
	Specific gravity (at 15°C)	1.028-1.034 (Those using milk of cows other than Jersey cows only as raw materials)	The measurement of specific gravity by the floatage type lactometers in the range of 1.015 to 1.040.	
		1.028-1.036 (Those using milk of Jersey cows only as raw materials)		
	Acidity (as lactic acid %)	<0.18% (Those using milk of cows other than Jersey cows only as raw materials)	Titration with sodium hydroxide solution	
		<0.20% (Those using milk of Jersey cows only as raw materials)		
	Bacteria (count /mL)	<50,000/mL	Standard agar medium (32-35°C 48±3h)	
Coliform bacilli	Negative	BGLB fermentation tube : gas formation→E.MB medium→Lactose broth fermentation tube and agar slant. The lactose broth fermentation tube : gas generation→The agar slant : microscopic test→Gram-negative nonspore-forming bacilli : Coliform bacilli positive		

## China

### ● Raw milk

Related legislation	Item	Specification	Analytical Methods	Reference
GB 5413.10-2010 National food safety standard Determination of vitamin K1 in foods for infants and young children, milk and milk products	Freezing point (°C) (test the sample after milking for 3h; only for Holstein cows)	-0.500~-0.560	GB 5413.38 Determination of freezing point in raw milk	
	Relative density (20°C /4°C)	≥ 1.027	GB 5413.33 Determination of specific gravity in raw milk	
	Protein (g/100g)	≥ 2.8	GB 5009.5 Determination of protein in foods	
	Fat (g/100g)	≥ 3.1	GB 5413.3 Determination of fat in foods for infants and young children, milk and milk products	
	Impurities (mg/kg)	≤ 4.0	GB 5413.30 Determination of impurities in milk and milk products	
	NFMS (g/100g)	≥ 8.1	GB 5413.39 Determination of nonfat total milk solid in milk and milk products	
	Acidity (°T) (only for Holstein cows)	≥ 12~18	GB 5413.34 Determination of acidity in milk and milk products	
	Contaminants	see GB 2762 Maximum levels of contaminants in foods		
	Mycotoxins	see GB 2761 Maximum levels of mycotoxins in foods		
TPC [cfu/g(mL)]	≤ 2×10 <sup>6</sup>	GB 4789.2 Food microbiological examination: Aerobic plate count		

### ● Pasteurized milk

Related legislation	Item	Specification	Analytical Methods	Reference
GB 5413.10-2010 National food safety standard Determination of vitamin K1 in foods for infants and young children, milk and milk products	Fat (g/100g) (Only for full cream pasteurized milk)	≥ 3.1	GB 5413.3 Determination of fat in foods for infants and young children, milk and milk products	
	Protein (g/100g)	≥ 2.9	GB 5009.5 Determination of protein in foods	
	NFMS (g/100g)	≥ 8.1	GB 5413.39 Determination of nonfat total milk solid in milk and milk products	
	Acidity (°T)	≥ 12~18	GB 5413.34 Determination of acidity in milk and milk products	

	Mycotoxins	see GB 2761 Maximum levels of mycotoxins in foods		
	TPC (cfu/g or cfu/mL)	n=5; c=2 m=50,000; M=100,000	GB 4789.2 Food microbiological examination: Aerobic plate count	Samples preparation: GB 4789.1 Food microbiological examination: General guidelines and GB 4789.18 Food microbiological examination: Milk and milk products
	Coliform (cfu/g or cfu/mL)	n=5; c=2 m=1; M=5	GB 4789.3 Food microbiological examination: Enumeration of coliforms (plate count method)	
	<i>Staphylococcus aureus</i>	n=5; c=0 0/25g(mL)	GB 4789.10 Food microbiological examination: <i>Staphylococcus aureus</i> (Qualitative test)	
	Salmonella	n=5; c=0 0/25g(mL)	GB 4789.4 Food microbiological examination: Salmonella	

● Sterilized milk

Related legislation	Item	Specification	Analytical Methods	Reference
GB 5413.10-2010 National food safety standard Determination of vitamin K1 in foods for infants and young children, milk and milk products	Fat (g/100g) (Only for full cream sterilized milk)	≥ 3.1	GB 5413.3 Determination of fat in foods for infants and young children, milk and milk products	
	Protein (g/100g)	≥ 2.9	GB 5009.5 Determination of protein in foods	
	NFMS (g/100g)	≥ 8.1	GB 5413.39 Determination of nonfat total milk solid in milk and milk products	
	Acidity (°T)	≥ 12~18	GB 5413.34 Determination of acidity in milk and milk products	
	Mycotoxins	see GB 2761 Maximum levels of mycotoxins in foods		
	Microbiological Index	commercial sterilization		GB/T 4789.26 Microbiological examination of food hygiene-Examination of commercial sterilization of canned food

● **Modified milk**

Related legislation	Item	Specification	Analytical Methods	Reference
GB 5413.10-2010 National food safety standard Determination of vitamin K1 in foods for infants and young children, milk and milk products	Fat (g/100g) (Only for full cream products)	≥ 2.5	GB 5413.3 Determination of fat in foods for infants and young children, milk and milk products	
	Protein (g/100g)	≥ 2.3	GB 5009.5 Determination of protein in foods	
	Mycotoxins	see GB 2761 Maximum levels of mycotoxins in foods		
	Microbiological Index (For the modified milk which produced by sterilization process)	commercial sterilization	GB/T 4789.26 Microbiological examination of food hygiene-Examination of commercial sterilization of canned food	
	TPC (cfu/g or cfu/mL)	n=5; c=2 m=50,000; M=100,000	GB 4789.2 Food microbiological examination: Aerobic plate count	Samples preparation: GB 4789.1 Food microbiological examination: General guidelines and GB 4789.18 Food microbiological examination: Milk and milk products
	Coliform (cfu/g or cfu/mL)	n=5; c=2 m=1; M=5	GB 4789.3 Food microbiological examination: Enumeration of coliforms (plate count method)	
	<i>Staphylococcus aureus</i>	n=5; c=0 0/25g(mL)	GB 4789.10 Food microbiological examination: <i>Staphylococcus aureus</i> (Qualitative test)	
Salmonella	n=5; c=0 0/25g(mL)	GB 4789.4 Food microbiological examination: Salmonella		

● Fermented milk

Related legislation	Item	Specification	Analytical Methods	Reference
GB 5413.10-2010 National food safety standard Determination of vitamin K1 in foods for infants and young children, milk and milk products	Fat (g/100g) (Only for full cream products)	fermented milk: $\geq 3.1$ flavored fermented milk: $\geq 2.5$	GB 5413.3 Determination of fat in foods for infants and young children, milk and milk products	
	NFMS (g/100g)	fermented milk: $\geq 8.1$	GB 5413.39 Determination of nonfat total milk solid in milk and milk products	
	Protein (g/100g)	fermented milk: $\geq 2.9$ flavored fermented milk: $\geq 2.3$	GB 5009.5 Determination of protein in foods	
	Acidity ( $^{\circ}$ T)	$\geq 70.0$	GB 5413.34 Determination of acidity in milk and milk products	
	Mycotoxins	see GB 2761 Maximum levels of mycotoxins in foods		
	Coliform (cfu/g or cfu/mL)	n=5; c=2 m=1; M=5	GB 4789.3 Food microbiological examination: Enumeration of coliforms (plate count method)	Samples preparation: GB 4789.1 Food microbiological examination: General guidelines and GB 4789.18 Food microbiological examination: Milk and milk products
	<i>Staphylococcus aureus</i>	n=5; c=0 0/25g(mL)	GB 4789.10 Food microbiological examination: <i>Staphylococcus aureus</i> (Qualitative test)	
	Salmonella	n=5; c=0 0/25g(mL)	GB 4789.4 Food microbiological examination: Salmonella	
	Yeasts	$\leq 100$	GB 4789.15 Food microbiological examination: Enumeration of moulds and yeasts	
Moulds	$\leq 30$			

● Evaporated milk, sweetened condensed milk and formulated condensed milk

Related legislation	Item	Specification	Analytical Methods	Reference
GB 5413.10-2010 National food safety standard Determination of vitamin K1 in foods for infants and young children, milk and milk products	Protein (g/100g)	Evaporated milk: $\geq 34\%$ of NFMS Sweetened condensed milk: $\geq 34\%$ of NFMS Formulated evaporated milk: $\geq 4.1$ Formulated sweetened condensed milk: $\geq 4.6$	GB 5009.5 Determination of protein in foods	NFMS(%)=100% - fat(%) - water(%) - sucrose(%)
	Fat(X) (g/100g)	Evaporated milk: $7.5 \leq X < 15.0$ Sweetened condensed milk: $7.5 \leq X < 15.0$ Formulated evaporated milk: $X \geq 7.5$ Formulated sweetened condensed milk: $X \geq 8.0$	GB 5413.3 Determination of fat in foods for infants and young children, milk and milk products	
	Milk solid (g/100g)	Evaporated milk: $\geq 25.0$ Sweetened condensed milk: $\geq 28.0$	NA	Milk solid(%)=100% - water(%) - sucrose(%)
	sucrose (g/100g)	Sweetened condensed milk: $\leq 45.0$ Formulated sweetened condensed milk: $\leq 48.0$	GB 5413.5 Determination of lactose and sucrose in foods for infants and young children, milk and milk products	
	Water (%)	Sweetened condensed milk: $\leq 27.0$ Formulated sweetened condensed milk: $\leq 28.0$	GB 5009.3 Determination of moisture in foods	
	Acidity ( $^{\circ}$ T)	$\leq 48.0$	GB 5413.34 Determination of acidity in milk and milk products	
	Mycotoxins	see GB 2761 Maximum levels of mycotoxins in foods		

**Korea**

Related legislation	Item	Specification	Analytical Methods	Reference
Livestock Processing Act	Nonfat milk solid(%)	8.0% <	Dry 5g milk at 98~100°C to get dried material % and then subtract milk fat(%)	Notification on Standard and Specification of Livestock Products (No. 2010-2)
	Milk fat(%)	3.0% <	Gerber Method	
	Specific Gravity(at 15°C)	1.028~1.034	Measure specific gravity of sample after standing until there is no bubble using a hydrometer at 15°C	
	Acidity (as lactic acid %)	<0.18%	Titration of 20 ml sample (10 ml milk+10 ml distilled water) with 0.1 N sodium hydroxide solution	
	Bacteria (counts/ml)	Not more than 20,000/ml	Aerobic Plate Count agar (35±1°C 48h or 30±1°C 72h)	
	Coliform	Not more than 2/ml (negative for pasteurized product)	MPN (Most Probable Number) Method Desoxycholate agar (35±1°C 24±2h) or Dehydrated coliform film (35±1°C 24±2h)	



## Southeast Asia

### Malaysia

Related legislation	Item	Specification	Analytical Methods	Reference
Food Regulations 1985	Milk fat	> 3.25%	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Non-fat milk solids	> 8.5%	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Added water, permitted food additive, other added substances or trace of antibiotic substance	Prohibited	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Reductase Test	Shall not completely decolorize any methylene blue solution in less than 4 hours	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Metal contaminant	Arsenic: <0.5 mg/kg; Lead: <1 mg/kg; Tin: <40 mg/kg; Mercury: <0.05 mg/kg; Cadmium: <1 mg/kg; Antimony: <1 mg/kg	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Total plate count	< 10 <sup>5</sup> cfu/g or /ml, 37°C for 48h (pasteurized milk only)	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Coliform count	< 50 cfu/g, 37°C for 48h (pasteurized milk only)	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Aflatoxin	< 0.5 µg/kg	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD

	Drug residue	Albendazole: <100µg/kg; Amoxicillin: <4 µg/kg; Ampicillin: <4 µg/kg; Avoparcin: <10 µg/kg; Benzylpenicillin: 4 <µg/kg; Cefquinome: <20 µg/kg; Ceftiofur sodium: <100 µg/kg; Cloxacillin: <30µg/kg; Colistin: <50µg/kg; Dexamethazone: <0.3 µg/kg; Dicloxacillin: <30 µg/kg; Dihydrostreptomycin: 200 µg/kg; Diminazene: <150 µg/kg; Erythromycin: <40 µg/kg; Febantel: <100 µ/kg; Fenbendazole: <100 µg/kg; Gentamicin: <100 µg/kg; Isometamidium: <100 µg/kg; Moxidectin: <500 µg/kg; Neomycin: <500 µg/kg; Oxacillin: <30 µg/kg; Oxfendazole: <100 µg/kg; Oxibendazole: <50 µg/kg; Oxytetracycline: <100 µg/kg; Spectinomycin: <200 µg/kg; Spiramycin: <200 µg/kg; Streptomycin: <200 µg/kg; Sulphadiazine: <100 µg/kg; Sulphadimethoxine: <10 µg/kg; Sulphadimidine: <25 µg/kg; Sulphonamide: <100 µg/kg; Tetracycline: <100 µg/kg; Thiabendazole: <100 µg/kg; Tilmicosin: <50 µg/kg; Tylosin: <50 µg/kg	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
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## Singapore

Related legislation	Item	Specification	Analytical Methods	Reference
Food Regulations	Milk fat	> 3.25%	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Milk solids other than milk fat	> 8.5%	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Added water, permitted food additive, other added substances or trace of antibiotic substance	Prohibited	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Metal contaminants	Arsenic: < 0.1 ppm; Lead: < 0.3 ppm; Copper: <20 ppm (only for milk & milk products in tins)	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Antibiotic residues	No person shall import, sell, advertise, manufacture, consign or deliver any milk which contains detectable antibiotic residues or their degradation products	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Total count	< 10 <sup>5</sup> cfu/g, 37°C for 48h (pasteurized milk only)	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore
	Coliforms	< 50 cfu/g (pasteurized milk only)	International standards (AOAC, ISO, APHA, etc)	Email communication with AVA Singapore

## Philippine

Related legislation	Item	Specification	Analytical Methods	Reference
Administrative Order No. 132 s.1970: Regulation Prescribing the Standard of Identity and Quality of Milk and Milk Products (B-4. 12-01)	Milk fat	> 3.0%	International standards (AOAC, ISO, APHA, etc)	Email communication with FDA Philippines
	Non-fat milk solids	> 8.25%	International standards (AOAC, ISO, APHA, etc)	Email communication with FDA Philippines
FDA Circular 01-As. 2004: Guidelines for the assessment of microbiological quality of processed foods	Pasteurized milk	Coliforms, cfu/ml: n=5, c=1, m=10 <sup>2</sup> , M=10 <sup>3</sup> (must be negative for <i>E. coli</i> ); Salmonella/25ml: n=5, c=0, m=0; <i>Listeria monocytogenes</i> /25ml: n=5, c=0, m=0; Psychrotrophic bacteria, cfu/ml: n=5, c=1, m=10, M=10 <sup>2</sup> ; SPC/APC, cfu/ml: n=5, c=1, m=5x10 <sup>4</sup> , M=10 <sup>5</sup>	International standards (AOAC, ISO, APHA, etc)	Email communication with FDA Philippines

## Indonesia

Related legislation	Item	Specification	Analytical Methods	Reference
Head of the National Agency for Drug and Food Control of the Republic of Indonesia Regulation No. HK.00.06.1.52.4011 of 2009 on Maximum Level of Microbiological and Chemical Contaminants in Food***	Total Plate Count	< 5 x 10 <sup>4</sup> cfu/ml	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	Coliforms****	< 10MPN/ml	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	<i>Escherichia coli</i>	< 3 MPN/ml	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	<i>Salmonella sp.</i>	negative per 25ml	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	<i>Staphylococcus aureus</i>	< 1x 10 <sup>2</sup> cfu/ml	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	<i>Listeria monocytogenes</i>	negative per 25ml	SNI 19-2897-1992 Analytical Methods for Microbiological Contaminants	
	Metal contaminants	Arsenic: < 0.1 ppm; Mercury: < 0.03 ppm; Lead: < 0.02 ppm;	SNI 01-2896-1998 Analytical Methods for Metal Contaminants;	
	Aflaxatoxin	Aflaxatoxin M <sub>1</sub> : < 0.5 ppb	Not specified	
SNI 01-3951-1995	Quality characteristics for aroma, taste and color	aroma: typical; taste: typical; color: typical	Organoleptic	
	Fat content	Unflavored milk: min 2.80% W/W; Flavored milk: min 1.50% W/W	SNI 01-2782-1998 Analytical Methods for Fresh Milk	
	Density level without fat	Unflavored milk: min 7.7% W/W; Flavored milk: min 7.5% W/W	SNI 01-2782-1998 Analytical Methods for Fresh Milk	
	Reductaste test with methylene blue	0	SNI 01-2782-1998 Analytical Methods for Fresh Milk	
	Protein content	Unflavored milk: min 2.5% W/W; Flavored milk: min 2.5 W/W	SNI 01-2782-1998 Analytical Methods for Fresh Milk	
	Phosphate test	0	SNI 01-2782-1998 Analytical Methods for Fresh Milk	
	Total Plate Count	< 3 x 10 <sup>4</sup>	SNI 2897:2008 Analytical Methods for Microbiological Contaminants in Meat, Eggs and Milk, and its Products*****	
	Presumptive Coliform	< 10 MPN/ml	SNI 2897:2008 Analytical Methods for Microbiological Contaminants in Meat, Eggs and Milk, and its Products*****	

	Metal contaminants	Lead: < 1.0 ppm; Cooper: < 2.0 ppm; Zinc: < 5 ppm	SNI 01-2896-1998 Analytical Methods for Metal Contaminants;	
	Arsenic	< 1.0 ppm	SNI 01-4866-1998 Analytical Methods for Arsenic	
	Preservatives	As specified in Minister of Health of the Republic of Indonesia Regulation No. 722/Menkes/Per/IX/88 on Food Additives and Regulation No. 1168/Menkes/PER/X/1999 on Food Additives	SNI 01-2894-1992 Analytical Methods for Food Additives/Preservatives;	
	Sampling	As specified in SNI 01-3951-1995 Item 5		

## Thailand

Related legislation	Item	Specification	Analytical Methods	Reference
Notification of the Ministry of Public Health No. 265 B.E. 2545 (2002)	Milk protein content	Not less than 2.8% by weight	Kjeldahl	AOAC standard method
	Milk solid non-fat and milk fat		Acid hydrolysis, solvent extraction	
	* Whole milk	Milk solid non-fat content not less than 8.25% by weight, milk fat content not less than 3.2% by weight		
	* Partly skimmed milk	Milk solid non-fat content not less than 8.5% by weight, milk fat content more than 0.1% by weight but less than 3.2% by weight		
	* Skimmed milk	Milk solid non-fat content not less than 8.8% by weight, milk fat content not more than 0.1% by weight		
	Pathogenic microorganisms	Free from pathogenic microorganisms		Bacteriological Analytical Manual,
	Bacterial count in pasteurized milk	Not more than 10,000 in 1 ml. at manufacturing factory and not more than 50,000 at all time after that to the expiry date		Bacteriological Analytical Manual,
	Bacterial count in sterilized and UHT milk	Not be detected in 1 ml		Bacteriological Analytical Manual,
	<i>Escherichia coli</i>	Not detected in 0.1 ml. of heat treated milk		Bacteriological Analytical Manual,
	Coliform bacteria	Not more than 100 in 1 ml. of pasteurized milk at manufacturing factory		Bacteriological Analytical Manual,
<i>Bacillus cereus</i>	Not more than 100 in 1 ml. of pasteurized milk		Bacteriological Analytical Manual,	
Contaminant	Free of toxic substances and contaminants in quantity which may be hazardous to health			

	Food Additives	<ul style="list-style-type: none"> <li>• Permitted food additives to be used in milk powder and filled milk powder (Maximum level):</li> <li>• Stabilizers Sodium citrates , Potassium citrates <ul style="list-style-type: none"> <li>- 5,000 mg/kg for single used or combination used, calculated on dry basis.</li> </ul> </li> <li>• Firming agents Potassium chloride, Calcium chloride <ul style="list-style-type: none"> <li>- appropriate quantities necessary for production.</li> </ul> </li> </ul>		
		<ul style="list-style-type: none"> <li>• Acidity regulators Sodium phosphates, Potassium phosphates, Diphosphates, Triphosphates, Polyphosphates, Sodium carbonates, Potassium carbonates <ul style="list-style-type: none"> <li>- 5,000 for single used or combination used, calculated on dry basis.</li> </ul> </li> <li>• Emulsifiers Lecithins or phospholipids from natural sources. appropriate quantities necessary for production.</li> <li>• Mono- and diglycerides of fatty acids. <ul style="list-style-type: none"> <li>- 2,500 mg/kg</li> </ul> </li> <li>• Anti-caking agents Calcium carbonates, Tricalcium orthophosphate, Trimagnesium orthophosphate, Magnesium carbonate, Magnesium oxide, Silicon dioxide, amorphous, Calcium silicate, Magnesium silicate, Sodium aluminosilicate, Calcium aluminium silicate, Aluminium silicate <ul style="list-style-type: none"> <li>- 10,000 for single use or combination use</li> <li>- • Polydimethylsiloxane</li> <li>- 10 mg/kg</li> </ul> </li> <li>• Antioxidants L-Ascorbic acid, Sodium ascorbate, Ascorbyl palmitate <ul style="list-style-type: none"> <li>- 500 mg/kg calculated as ascorbic acid</li> </ul> </li> <li>Butylated hydroxyanisole BHA 100 mg/kg</li> </ul>		



		<ul style="list-style-type: none"> <li>• Permitted food additives to be used in condensed milk, recombined condensed milk, filled condensed milk.</li> <li>• Stabilizers Sodium citrates, Potassium citrates, Calcium citrates <ul style="list-style-type: none"> <li>- 2,000 mg/kg for single use or 3,000 mg/kg for combination use, calculated on dry basis.</li> </ul> </li> <li>• Firming agents Potassium chloride, Calcium chloride <ul style="list-style-type: none"> <li>- 2,000 mg/kg for single use or 3,000 mg/kg for combination use, calculated on dry basis.</li> </ul> </li> <li>• Acidity regulators Calcium carbonates, Sodium phosphates, Potassium phosphates, Calcium phosphates, Diphosphates, Triphosphates, Polyphosphates, Sodium carbonates, Potassium carbonates <ul style="list-style-type: none"> <li>- 2,000 mg/kg for single use or 3,000 mg/kg for combination use, calculated on dry basis</li> </ul> </li> <li>• Emulsifier Lecithins <ul style="list-style-type: none"> <li>- appropriate quantities necessary for production.</li> </ul> </li> <li>• Thickener Carrageenan 150 mg/kg</li> </ul>		
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## Vietnam

Related legislation	Item	Specification	Analytical Methods	Reference
QCVN 5-1: 2010/BYT: National technical regulation for liquid milk	NA	NA	NA	NA



## **4. Summary Report**

### **4.1 Comparative Evaluation of Commodity Food Standards and Methods of Analysis in Japan, Korea and China**

#### **4.1.1 Investigation Overview**

In FY2010, investigations were made on “instant noodles”, “carbonated soft drinks”, “prepared frozen foods” and “milk” in Japan, Korea and China, focusing on the methods of analysis and hygiene related items. The investigation results were summarized on the basis of the food standard items and the analytical methods specified in “Standards for Foodstuffs and Additives” under “Food Sanitation Act” in Japan, and an addendum document showing the results of the investigations on Korea and China was prepared in the form of a list (hereinafter referred to as “List”).

#### **4.1.2 Results of Investigations on Each Country**

##### **4.1.2.1 Japan**

Of the foods investigated, the food standards for “instant noodles”, “carbonated soft drinks” and “prepared frozen foods” are prescribed in “Standards for Foodstuffs and Additives Under the Food Sanitation Act” (established by MHW Notification No. 370 on December 28, 1959). Accordingly, these foods are required to comply with both A. General Compositional Standards for Foods and D. Specific Items (instant noodles, carbonated soft drinks and prepared frozen foods). (As for B. General Food Production, Processing and Preparation Standards, and C. General Food Storage Standards, it seemed very difficult to coordinate the food standards and the methods of analysis in Japan with those in other countries through the questionnaire approach; therefore B and C were omitted from the investigation, and other countries were requested to include these items in the Food Standards according to the situation of each country.) Thus, report was made on these A and D standards and methods of analysis.

As for “milk”, the standards and analytical methods are prescribed in the “Ministerial Ordinance on Compositional Standards for Milk and Milk Products” (MHW Ordinance No. 52 December 27, 1951); therefore, report was made on the related standards and methods of analysis based on the Ordinance.

Pesticide residues are prescribed in “General Foods” in “Standards for Foodstuffs and Additives”. There are “notice analysis” and “notification analysis” in the public methods of analysis. “Not Detected” is a standard for

“notice analysis”; it is required to confirm whether or not any pesticide residue was “not detected” by the analysis method designated in the administrative notification, and to judge the compliance with the standards<sup>1</sup>. As for residues other than pesticide residues for which “Not Detected” is set as a standard, the methods of analysis have been specified in the administrative notification<sup>1</sup>).

#### 4.1.2.2 Korea

In Korea, there is a notification titled “Standards and Specifications of Foods (Official Compendium)” based on the Food Sanitation Act under the jurisdiction of Korea Food and Drug Administration (KFDA Notification No. 2010-87)<sup>2</sup>. Individual methods of analysis are specified in Korea Food Code as shown in the column of sources in the List.

#### 4.1.2.3 China

Regarding methods of analysis, GB Standards have been established as Chinese national standards. The GB Standards consists of the following national standards<sup>3</sup>.

- GB : People's Republic of China Mandatory Standards
- GB/T : People's Republic of China Recommended Standards  
(Voluntary Standards)
- GB/Z : People's Republic of China National Standardization Guiding  
Technical Documents

In those newly established standards, there are many that are consistent with the international standards (ISO, IEC, etc.). Those standards are shown in the column of sources in the List. Chinese standards that are not consistent with Japanese and Korean standards were described in a separate item in the List.

#### 4.1.3 List of Food Standards in Japan, Korea and China (related to hygiene)

Food Standards in Japan, Korea and China are shown in **Appendix I**.

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<sup>1</sup> MHLW Website > Measures and Policies by Category [Pesticide residues] > Positive List System (Q&A) URL : [www.mhlw.go.jp/topics/bukyoku/iyaku/syoku-anzen/zanryu2/060329-1.html](http://www.mhlw.go.jp/topics/bukyoku/iyaku/syoku-anzen/zanryu2/060329-1.html) (Access : 2011.3.25)

<sup>2</sup> Korean Law 「Standards and Specifications of Foods」 (Official Compendium) Table of Contents URL : <http://www.kbn-japan.com/shohisha541-FA.htm> (Access : 2011.3.25)

<sup>3</sup> Explanation of Abbreviations for Standards : CSBTS/GB Standards. CSBTS Association of People's Republic of China's Standards (Updated : 2010.11.1)  
URL : <http://www2u.biglobe.ne.jp/~standard/bdlist/csbts.htm> (Access : 2011.3.25)

The column of “General Foods” in the List aims at description of the standards common to all foods; however, China’s answers to the questionnaire showed the standards established for individual foods. Therefore, though there are differences between the phase of Chinese standards for general foods and that of the Japanese standards for general foods that prohibit inclusion of antibiotics in any food, the Chinese standards are described with no change in the List because they do not affect the understanding of the List.

As for milk, China’s answers to the questionnaire showed the standards and methods of analysis for raw milk, pasteurized milk, sterilized milk, modified milk, fermented milk, evaporated milk, sweetened condensed milk and formulated condensed milk as Cow’s milk. However we included the Chinese standards and methods of analysis for pasteurized milk in the List, which are similar to the Japanese standards for milk.

#### **4.1.4 Considerations about the List**

Considerations were given to the food standards and methods of analysis in the three countries based on the List.

- The food regulatory system in Korea is very similar to that in Japan; therefore it is easy to make comparisons between Korea and Japan.
- Foods standards for the foods investigated, e.g. frozen foods, in China are different from those in Japan and Korea. In China, food standards are established for each ingredient (e.g. flour and rice, poultry, and seafood)
- Safety and hygiene which are most important for foods are considered relatively common in all countries from the viewpoints of tolerable amounts in humans and lifetime risks; however, some hygiene related standards are slightly or greatly different among those countries surveyed. These differences among those countries are thought to arise from exposure level and amount of intake of foods that are different by nation, historical background of safety and hygienic conditions, differences in food culture, coordination between importing and exporting countries, and, in recent years, progress of ensuring consistency with Codex Standards in those countries. For these reasons and background, there are aspects that make it difficult to facilitate the harmonization of the food standards and reference values speedily.
- As for methods of analysis, there are microbial analysis and chemical analysis. These are almost similar in those countries surveyed. In the

case of microbial analysis, if microorganism to be tested is the same, culture conditions such as culture media, culture temperature and time are not significantly different. In the case of chemical analysis of, for example, heavy metals and pesticide residues, pretreatment such as preparation of test solution and assay by analytical instruments are most important. Thus, there are no major differences among the countries surveyed, though there are slight differences in analytical operations related to analysis technique.

- The important challenge for harmonization of methods of analysis is not uniformity in analytical methods but consistency in results of analyses among the countries concerned. That is, control of accuracy of analysis (no deviation from true values) and analytical precision (less variability in analysis values) is a key point.
- As mentioned above, harmonization of foods standards are considered difficult because of the situation of each country. On the other hand, since methods of analysis are purely a matter of technology, it is possible to achieve harmonization among the countries concerned. However, unless ASEAN + 3 firmly collaborate aiming at harmonization, it is thought difficult to achieve the goal.

## **4.2 Food Regulatory System and Food Standards in Southeast Asian Countries**

### **4.2.1 Food Regulatory System in Southeast Asian Countries**

Each country in the ASEAN region has a unique food regulatory system that is different from one another. While some countries have a single regulatory authority that controls food safety and quality from the farm to the table (Malaysia and Singapore), others have multiple regulatory agencies that regulate specific aspects of food products depending on the stage of production from primary production to processed foods (Indonesia, Philippines, Thailand and Vietnam). Nevertheless, there is similarity in the regulatory system among those countries, that is, the existence of a “general food law” enacted by the main legislative bodies in each country, which are described below:

Indonesia: Act of the Republic of Indonesia No. 7 of 1996 on Food

Malaysia: Food Act 1983

Philippines: Food, Drug and Devices, and Cosmetics Act

Singapore: Sale of Food Act

Thailand: Food Act B.E. 2522 1979

Vietnam: Law No. 55/2010/QH12 of June 17, 2010 on Food Safety

#### 4.2.2 Food Standards and Harmonization in Southeast Asian Countries

In relation to food standards, most countries have both mandatory standards and voluntary standards. Those food standards have been developed by the main food administration authorities in Malaysia, Philippines, Singapore, Thailand, and Vietnam, while they have been set mainly by the standardization body in Indonesia. Voluntary standards can often be applied as mandatory standards when they are used as references in regulatory procedures.

With the goal of reaching an ASEAN Economic Community by 2015, the countries in the region are currently in the process of harmonization of food standards in the region. Harmonization of these food standards will be able to not only stimulate trade and economic cooperation in ASEAN countries but also provide a uniform level of public health from the viewpoint of food safety in the region, which can further lead to higher food security and consumer protection in all countries in the region.

In reality, however, harmonization of food standards has not yet been advanced enough. For example, food standards for “instant noodles” (**Example 1**) and “carbonated soft drinks” (**Example 2**) that are considered universal and therefore harmonization is relatively easy are actually different from country to country as shown in the following chart. Thus, harmonization in these countries appears difficult.

##### Example 1 : Comparison of the food standards for “instant noodles”

	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Water content (fried noodles) (% W/W)	≤10	≤10	≤8	≤13	≤10	≤10
Protein content (wheat) (% W/W)	≥8.5	≥8.5	Not specified	≥9.0	≥8.5	Not specified
Total bacterial count (cfu/g)	≤1000	Not specified	Not specified	Not specified	≤100	Not specified

##### Example 2 : Comparison of the food standards for “carbonated soft drinks”

	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Lead (mg/kg)	≤0.2	≤0.2	Codex	≤0.2	≤0.5	≤0.05
Fungus, yeast (cfu/ml)	≤50	≤10	Not specified	No regulation	No regulation	≤10

## 5. Report on International Conference

As part of briefing sessions on the results of the research of “Sharing Information on Food Standards and Methods of Analysis in East Asia”, which was conducted as the FY2009 and FY2010 Overseas Business Support Project for Japanese Food Industry supported by Ministry of Agriculture, Forestry and Fisheries, the following international conference was held at Pathumwan Princess Hotel in Bangkok, Thailand, on March 4 (Fri.), 2011.

*International Conference for Sharing Information on Food Standards, Resource and Environmental Conservation for Food Industries in Asia Pacific – Challenges and Opportunities for Food Safety & Human Health –*

### **Background of the Conference:**

The Second ASEAN+3 Roundtable Conference on Food Security Cooperation Strategy was held in May 2010 in Tokyo. At the conference, the participating countries shared the recognition of the necessity of dialogues for promotion of agriculture and food industries within the region. Further, the APEC Ministerial Meeting on Food Security was first held in October 2010 in Niigata, Japan, where “dialogues of food industries on quality management and resource and environment conservation” was established as an action plan.

### **Purposes of the International Conference:**

In order to strengthen food industries’ capabilities of quality and safety control of foods in the region for enhancement of their international competitiveness, it is of key importance for the food industries in the region to understand the food standards and methods of analysis in the countries in the region. Thus, this international conference was held for the following purposes: (1) To make investigations on the commodity food standards and methods of analysis in the Asia-Pacific region and to contribute to the mutual understanding in the region. (2) To contribute to future possibility of integration or harmonization of the commodity food standards and methods of analysis in the Asia-Pacific region. (3) To contribute to fair trade and business opportunities for foods in the region through the activities mentioned in (1) and (2).

At this international conference, ILSI Japan and ILSI Focal Point in China, ILSI Korea and ILSI Southeast Asia Region reported the results of the research of “Investigation and Sharing of Information on Food Standards and Methods of Analysis in East Asia” conducted as the FY2009 and FY2010

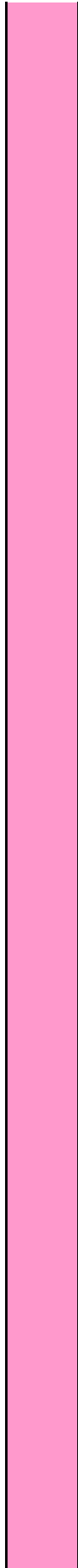


Overseas Business Support Project for Japanese Food Industry supported by Ministry of Agriculture, Forestry and Fisheries (**Session 1**). In addition, the representatives from Indonesia, Philippines and Thailand made presentations on the activities and roles of the regulatory authorities and food industries toward harmonization of the standards for foods and agricultural products in ASEAN countries (**Session 2**). Furthermore, in relation to food security and environmental issues (**Session 3**), an official of the Thai office of FAO gave a lecture about stable supply of foods and food security in the ASEAN region. In relation to the efforts for environment protection/preservation, the representative from Ajinomoto Co. which is developing business in Thailand made a presentation on the activities and efforts in the Thai factory of Ajinomoto Co., specifically, case reports, problems and challenges.

The participants were far more than expected and totaled over 100 persons. Not only the administrators in Thailand but also officials of Thai embassies of the countries in the ASEAN and APEC regions and administrators of Indonesia, Philippine and Hong Kong were present at the Conference. It was noted that interest of administrators and food industries in harmonization of the standards for foods and agricultural products in the ASEAN countries is very high. The conference was really more successful than expected.

Appendix I List of Food Standards in Japan, Korea and China (related to hygiene)

Japan					Korea					China							
Foods	Classification	Item	Specification	Analytical Methods	Reference	Foods	Classification	Item	Specification	Analytical Methods	Reference	Foods	Classification	Item	Specification	Analytical Methods	Reference
Food in general (Applied to all foods)	Micro-organisms					Food poisoning bacteria			Not detectable in foods	Systematic or individual analytical methods are generally as follows: (1) Aseptic Sample preparation (homogenization and serial dilution if necessary) → (2) enrichment with respective media → (3) Plate on respective selective media and pick suspected colonies → (4) confirm by further identification test	Korea Food Code (Article 10-3) : Salmonella (10.3.11), <i>Staphylococcus aureus</i> (10.3.12), <i>Vibrio parahaemolyticus</i> (10.3.13), <i>Clostridium perfringens</i> (10.3.14), <i>Listeria monocytogenes</i> (10.3.15), <i>E. coli</i> O157:H7 (10.3.16), <i>Yersinia enterocolitica</i> (10.3.17), <i>B. cereus</i> (10.3.18), <i>Campylobacter jejuni</i> (10.3.19), <i>Clostridium botulinum</i> (10.3.20)	Food in general (Applied to all foods)		Aerobic Plate Count	This standard is to state the analytical method for pathogens and hygiene indicator microbes. The specific limitation in certain food category will be stated in separate standards of category.	Difference with FDA/BAM, Chapter 3: Aerobic plate count, 2001 - Appropriate enumeration scope of plate counts computed change to 30 CFU ~ 300 CFU from 25 CFU~250 CFU. - Incubate temperature change to 36 ± 1°C from 35 ± 1°C. - 10 times dilution, change to transferring 1ml of previous dilution to 9 ml of diluent from transferring 10ml of previous dilution to 90 ml - do not adopt the Spiral Plate Method	GB 4789.2-2010 National Food Safety Standard Food Microbiological examination: Aerobic plate count
	Chemical substances	Antibiotics or Chemically synthesized antibacterial substances	shall not be contained in foods	Notification Test method : · Simultaneous analysis · Individual analysis	Test methodology of the substances being the elements of agricultural chemicals, feed additives or veterinary products remaining in foods. (Notice from the Ministry of Health, Labour and Welfare)	Any veterinary drugs (including their metabolites) of which manufacture or import is not authorized due to safety or efficacy problems shall not be detected.			Not detectable in foods	Nitrofurans and its derivatives (Furazolidone, Furaltidone, Nitrofurazone, Nitrofurantoin, Nitrovin, etc.), Chloramphenicol, Malachite green and its derivatives, Diethylstilbestrol, Dimetridazole, Clenbuterol, Vancomycin, Chlorpromazine, Thiouracil, Colchicine, Pyrimethamine, Medroxyprogesterone acetate Simple, Preliminary Test : Charm II receptor assay, Fluorescence Immunoassay, or Enzyme Immuno Assay Confirmation Test : Liquid/Gas Chromatography-Mass Spectrometer	Korea Food Code (Article 10.5)		Enumeration of coliforms	Difference with FDA/BAM, Chapter 4: Enumeration of <i>Escherichia coli</i> and the coliform bacteria, 2002 - Appropriate enumeration scope of plate counts computed change to 15 CFU ~ 150 CFU from 25 CFU~250 CFU. - Incubate temperature change to 36 ± 1°C from 35 ± 1°C. - Sample size change to 25g (or 25ml) form 50g (or 50ml)	GB 4789.3-2010 National Microbiological examination: Enumeration of coliforms		
		Foods shall not contain substances used as ingredients of agricultural chemicals and other chemical substances.	not detected in foods (19 substances)	Each Test Methodology of 2,4,5-T, Azocyclotin and cyhexatin, Amitrol, Captafol, Carbadox, Coumaphos, Chloramphenicol, Chlorpromazine, Diethylstilbestrol, Dimetridazole, Daminozide, Nitrofurazone, Nitrofurantoin, Furazolidone, Furaltidone, Prophan, Malachite Green, Metronidazole and Ronidazole.	Specifications and Standards for Foods, Food Additives, etc.									Salmonella	Same as FDA/BAM, Chapter 5: Salmonella, 2003 and AOAC official Method 967.26, 967.27, 967.28.	GB 4789.4-2010 National Food Safety Standard Food Microbiological examination: Salmonella	
		Pesticide residues	The residual standards is individually provided.	Notification Test method : · Simultaneous analysis · Individual analysis	Test methodology of the substances being the elements of agricultural chemicals, feed additives or veterinary products remaining in foods. (Notice from the Ministry of Health, Labour and Welfare)	Pesticide Maximum Residue Limits in foods			The residual standard is individually provided.	Systematic or individual analytical methods are generally as follows: (1) Sample preparation → (2) Extraction with solvent → (3) Purification by chromatography → (4) Preparation of test solution → (5) Instrumental analysis : GC or GC-MS for volatile substances, LC or LC-MS for non-volatile substances etc.	Korea Food Code (Article 10.4)			<i>Staphylococcus aureus</i>	Total 3 Methods 1. First Method: Qualitative Analysis. it refers to AOAC office Method 987.09 <i>Staphylococcus aureus</i> in foods most probable number method for isolation and enumeration and ISO 6888-1: 1999 Microbiology of food and animal feeding stuffs- Horizontal method for the enumeration of coagulase-positive staphylococci, <i>Staphylococcus aureus</i> and other species - Part1 : Technique using Baird-Parker agar medium 2. Second Method: Modified by AOAC 975.55 <i>Staphylococcus aureus</i> in foods surface plating method isolation and enumeration, 1976 and ISO 6888-1:1999, the difference are: - Change the AOAC sampling size to 25g (or 25ml) from 50g (or 50ml) - Modified the ISO computational formula 3. Third Method: modified by AOAC 987.07, the difference is: - Change the AOAC sampling size to 25g (or 25ml) from 50g (or 50ml)	GB 4789.10-2010 National Food Safety Standard Food Microbiological examination: <i>Staphylococcus aureus</i>	
		Pesticide residues without individual standars	must not exceed 0.01 mg/L												Enumeration of moulds and yeasts	Sampling Preparation, Dilution, plating and incubation of sampling (Potato dextrose agar, or Rose bengal medium), counting of plate	GB 4789.15-2010 National Food Safety Standard Food Microbiological examination: Enumeration of moulds and yeasts
						Foreign Material			Food shall not contain unhygienic material to be mixed with foreign material.	Foreign materials : strainer method (fine powder), Filter method (Liquid), Wildeman Flask method (insect, animal fur/light materials), Precipitation method (mouse feces, etc. heavy matters)	Korea Food Code (Article 10.9.2.1)			<i>Listeria monocytogenes</i>	Difference with FDA/BAM, Chapter 10, <i>Listeria monocytogenes</i> , 2002 - Enrichment Medium, LB Broth replaced of BLEB Broth - Isolation Medium, PALCAM replaced of OXA, add CHROMAGAR <i>Listeria</i> coloration media - Add the preliminary screening step - Incubate temperature change to 36 ± 1°C from 35 ± 1°C.	GB 4789.30-2010 National Food Safety Standard Food Microbiological examination: <i>Listeria monocytogenes</i>	
									Iron filings as metallic foreign matter : <not more than 10.0 mg/kg	Metalic foreign matter : Prepare sample (500g powder, 1 kg liquid/paste in 5~6 L distilled water) → Use stick magnet (10,000 gause) for 10 min to collect → Dry and measure weight → Screen using sieve (1.4 x 1.4 mm) and measure the size of metallic materials.				Lactic acid bacteria	Presumptive test (Sampling Preparation, Dilution, plating and incubation of sampling (MRS agar, MC agar), counting of plate) → Identification test (MRS agar plate or MC agar plate) → Report	GB 4789.35-2010 National Food Safety Standard Food Microbiological examination: Lactic acid bacteria	
									Any metallic particles : <2.0 mm in length					<i>Enterobacter sakazakii</i>	First method, Modified by ISO/TS 22964: 2006 ( Milk and milk products -Detection of <i>Enterobacter sakazakii</i> ), the difference are: - Incubate temperature change to 36 ± 1°C from 35 ± 1°C - <i>Enterobacter sakazakii</i> isolated plate chang to DFI from ESIA, incubate temperature change to 36 ± 1°C from 44 ± 1°C. - decide 100g (or 100ml) as the basic detection unit. Secod Method, it is refer to FDA, Isolation and enumeration of <i>Enterobacter sakazakii</i> form dehydrated powdered infant formula (July 2002)	GB 4789.40-2010 National Food Safety Standard Food Microbiological examination: <i>Enterobacter sakazakii</i>	









Lead (Pb)	cereals: 0.2mg/kg; legume: 0.2mg/kg; tubes: 0.2mg/kg; meat and poultry: 0.2mg/kg; edible meat and poultry offal: 0.5mg/kg; fish: 0.5mg/kg; fruit: 0.1mg/kg; small fruit, berry and grape: 0.2mg/kg; vegetable excluding bulb vegetable, leafy vegetable, fungi: 0.1mg/kg; bulb vegetable: 0.3mg/kg; leafy vegetable: 0.3mg/kg; fresh milk: 0.05mg/kg; infant formula: 0.02mg/kg; fresh eggs: 0.2mg/kg; wines: 0.2mg/kg; fruit juice: 0.05mg/kg; tea: 5mg/kg	1.Graphite furnace atomic absorption spectrometry Sample preparation—ashing or digesting—standard solution preparation—determination by instrument. 2.Hydride Generation-atomic Fluorescence Spectrophotometry Sample preparation—digestion—standard solution preparation—determination 3.Flame Atomic Absorption Spectrometric analysis (FAAS) Sample preparation—extraction and separation—determination by instrument 4.Double sulphur hydrazone colorimetry Sample preparation—digestion—standard solution preparation—determination by spectrophotometer 5.single-sweep polarography Sample preparation—digestion—standard solution preparation—determination by polarographic analyze	GB 5009.12-2010 National food safety standard determination of lead in foods
Cadmium (Cd)	cereals - rice, soybean: 0.2mg/kg, peanut: 0.5mg/kg, flour: 0.1mg/kg, coarse cereal(corn, millet, sorghum, tubes): 0.1mg/kg; meat and poultry: 0.1mg/kg; meat and poultry liver: 0.5mg/kg; meat and poultry kidney: 1.0mg/kg; fruit: 0.05mg/kg; root and tuber vegetable excluding celery: 0.1mg/kg; leafy vegetable, celery, fungi: 0.2mg/kg; other vegetable: 0.05mg/kg; fish: 0.1mg/kg; fresh eggs: 0.05mg/kg	1.Graphite furnace atomic absorption spectrometry Sample preparation—dry ashing or wet digestion—standard solution preparation —determination by instrument 2. Atomic Absorption Spectrometry (AAS) 2.1Potassium iodide -4-methyl pentanone-2 Sample preparation—extraction and separation—determination by instrument 2.2Double sulphur hydrazone-butyl acetate Sample preparation—extraction and separation—determination by instrument 3. Colorimetric method Sample preparation—Digestion—determination by spectrophotometer 4. Atomic Fluorescence Spectrometric (AFS) Samplepreparation—dry ashing or wet digestion—standard solution preparation —determination by AFS	GB/T 5009.15-2003 Determination of cadmium in foods
Mercury (Hg)	cereals: 0.02mg/kg total Hg; tubes(potato, sweet potato), vegetable, fruit: 0.01mg/kg total Hg; fresh milk: 0.01mg/kg total Hg; meat, liquid eggs: 0.05mg/kg total Hg; fish excluding carnivorous fish and other aquatic products: 0.5mg/kg methyl Hg; carnivorous fish(shark, tuna, etc.): 1.0mg/kg methyl Hg	1. The determination of total mercury 1.1 Atomic fluorescence spectrophotometric Digestion—Preparation of standard solution—Determination by AFS 1.2 Cold atomic absorption spectrometry Sample preparation—Digestion—Instrumental analysis 1.3 Double sulphur hydrazone colorimetry Digestion—Determination by visible spectrophotometer 2. Determination of methylmercury 2.1 Gas Chromatography (GC) or Cold Vapour Atomic Absorption Sample preparation—extraction—centrifugal or filtration—elution—extraction—determination by instrument	GB/T 5009.17-2003 Determination of total and organic-mercury in foods
Arsenic (As)	cereals - rice: 0.15mg/kg inorganic As; flour: 0.1mg/kg inorganic As; coarse cereals: 0.2mg/kg inorganic As; vegetable: 0.05mg/kg inorganic As; fruit: 0.05mg/kg inorganic As; meat and poultry: 0.05mg/kg inorganic As; eggs: 0.05mg/kg inorganic As; milk powder: 0.25mg/kg inorganic As; fresh milk: 0.05mg/kg inorganic As; legume: 0.1mg/kg inorganic As; alcohol: 0.05mg/kg inorganic As; fish: 0.1mg/kg inorganic As; alga: 1.5mg/kg inorganic As; shellfish, prawn, crab(calculated on fresh weight): 0.5mg/kg inorganic As; shellfish, prawn, crab(calculated on dry weight): 1.0mg/kg inorganic As; other aquatic products(calculated on fresh weight): 0.5mg/kg inorganic As; edible oil: 0.1mg/kg total As; fruit juice and fruit pulp: 0.2mg/kg total As; cocoa butter and chocolate: 0.5mg/kg total As; other cocoa products: 1.0mg/kg total As; sugar: 0.5mg/kg total As	1. The determination of total arsenic 1.1Hydride Generation-atomic Fluorescence Spectrophotometry Wet digestion or dry ashing—standardard solution preparation—determination by AFS 1.2 Silver salt method Wet digestion or dry ashing—standardard solution preparation—determination by spectrophotometer 1.3 Method of Spot of arsenic Wet digestion or dry ashing—standardard solution preparation—determination by arsenic apparatus 1.4Borohydride Reduction Colorimetric Method Wet digestion or dry ashing—standardard solution preparation—determination by spectrophotometer 2. The determination of abio-arsenic 2.1Hydride Generation-atomic Fluorescence Spectrophotometry The extraction of abio-arsenic—standardard solution preparation—determination by AFS 2.2 Silver salt method The extraction of abio-arsenic—standardard solution preparation—determination by spectrophotometer	GB/T 5009.11-2003 Determination of total and inorganic arsenic in foods
Chrome (Cr)	cereals: 1.0mg/kg; legume: 1.0mg/kg; tubes: 0.5mg/kg; vegetable: 0.5mg/kg; fruit: 0.5mg/kg; meat including liver and kidney: 1.0mg/kg; fish and shellfish: 2.0mg/kg; eggs: 1.0mg/kg; fresh milk: 0.3mg/kg; milk powder: 2.0mg/kg	1. Graphite furnace atomic absorption spectrometry Sample preparation—wet digestion—constant volume—standard solution preparation —determination by atomic absorption spectrophotometer 2. The oscillopolarographic method Sample preparation—standard solution preparation—determination by oscillopolarographic polarograph	GB/T 5009.123-2003 Determination of chromium in foods
Aluminum (Al)	flour-made products: 100mg/kg	Sample preparation—digestion—standard solution preparation—determination by spectrophotometer	GB/T 5009.182-2003 Determination of aluminum in flour products

Instant noodles	Acid value	may not exceed 3	Titration by alkaline	Described in specifications and standards for foods, food additives, etc.	Instant noodles
	or Peroxide value	may not exceed 30	Titration by sodium thiosulfate		

Acid value of oil	Not more than 2.5	Acid value measurement method by titration	Korean Food Code (Article 10, 1.1.5.3.1)	Instant noodles
Peroxide value of oil	Not more than 50	Peroxide value measurement method by titration	Korean Food Code (Article 10, 1.1.5.3.5)	

Selenium (Se)	cereals: 0.3mg/kg; legume and legume products: 0.3mg/kg; vegetable: 0.1mg/kg; fruit: 0.05mg/kg; meat and poultry: 0.5mg/kg; kidney: 3.0mg/kg; fish: 1.0mg/kg; eggs: 0.5mg/kg; fresh milk: 0.03mg/kg; milk powder: 0.15mg/kg	1. Hydride Generation-atomic Fluorescence Spectrophotometry Sample preparation→digestion→standard solution preparation→determination by atomic fluorescence spectroscopy 2. Fluorescent method Sample preparation→digestion→extraction→standard solution preparation→determination by fluorescence spectrophotometer	GB/T 5009.93-2010National food safety standard determination of selenium in foods
Fluorin (F)	cereals - rice, flour: 1.0mg/kg, other cereals: 1.5mg/kg; legume: 1.0mg/kg; vegetable: 1.0mg/kg; fruit: 0.5mg/kg; meat: 2.0mg/kg; freshwater fish: 2.0mg/kg; eggs: 1.0mg/kg	1. Diffusion-Fluoring Reagent Colorimetric Analysis Sample preparation→diffusion→extraction and filtration→determination by visible spectrophotometer 2. Ashing and Distilling-Fluoring Reagent Colorimetric Analysis Sample preparation→fixation of fluorin→ashing→distilling→determination by visible spectrophotometer 3. Fluorine ion selective electrode Sample preparation→standard solution preparation→determination by calomel electrode	GB/T 5009.18-2003 Determination of fluorine in foods
Benzo (a) pyrene	baked smoked meat: 5μg/kg; vegetable oil: 10μg/kg; cereals: 5μg/kg	1. Fluorescence spectrophotometry Extraction→purification→separation→determination by Fluorescence spectrophotometry 2. Visual colorimetry Extraction→purification→separation→determination by ultraviolet light	GB/T 5009.27-2003 Determination of benzo(a)pyrene in foods
N-nitrosamine	seafood: 4μg/kg N-dimethyl nitrosamine, 7μg/kg N-diethyl nitrosamine; meat products: 3μg/kg N-dimethyl nitrosamine, 5μg/kg N-diethyl nitrosamine	1. Gas Chromatography- Thermal Energy Analyzer (GC-TEA) Extraction→concentration →determination by GC-TEA 2. Gas Chromatograph-Mass Spectrometer (GC-MS) Distill→extraction and purification→concentration→determination by GC-MS	GB/T 5009.26-2003 Determination of N-nitrosamines in foods
Polychlorodiphenyls	marine fish, shellfish, prawn and alga products (edible parts): 2.0mg/kg polychlorodiphenyls, 0.5mg/kg PCB138, 0.5mg/kg PCB153	1. Gas Chromatography-Mass Spectrometry with Isotopic Dilution Method Sample preparation→extraction→purification→separation→concentration→determination by GC-MS 2. Gas Chromatography (GC) Extraction→purification→concentration→determination by GC	GB/T 5009.190-2006 Determination of indicator polychlorinated biphenyls in foods
Nitrite	cereals (rice, flour, corn): 3mg/kg; vegetable: 4mg/kg; fish: 3mg/kg; meat: 3mg/kg; eggs: 5mg/kg; pickled vegetable: 20mg/kg; milk powder: 2mg/kg; salt(calculated on NaCl): 2mg/kg	1. Ion Chromatography (IC) Sample preparation →extraction and purification→separation→determination by Conductivity Detector (CD) 2. Spectrophotometry Sample preparation→extraction→purification→determination by spectrophotometer 3. Determination of nitrite and nitrate in dairy products Sample preparation (remove fat and protein)→nitrate reduction→coloration→determination by spectrophotometer	GB/T 5009.33-2010 National food safety standard determination of nitrite and nitrate in foods
Rare earth	cereals - rice, corn, wheat: 2.0mg/kg; vegetable excluding spinach: 0.7mg/kg; fruit: 0.7mg/kg; peanut kernel: 0.5mg/kg; potato: 0.5mg/kg; mung bean: 1.0mg/kg; tea: 2.0mg/kg	Sample preparation→ashing→dissolution→centrifugal→standard solution preparation→determination by spectrophotometer	GB/T 5009.94-2003 Determination of rare earths in vegetable foods
Aflatoxin B1	corn, peanut and its products: 20μg/kg; rice, vegetable oil(excluding corn oil & peanut oil): 10μg/kg; other cereals, legume, fermented food: 5μg/kg; infant formula: 5μg/kg	1. Thin-Layer Chromatography (TLC) Extraction→Concentration→Thin-Layer separation→determination by ultraviolet lamp 2. Competition Enzyme-Linked Immunosorbent Assay (C-ELISA) Extraction→defat→Concentration→Determination by enzyme-labeled instrument	GB/T 5009.22-2003 Determination of aflatoxin B1 in foods
Aflatoxin M1	fresh milk: 0.5μg/kg; dairy products(calculated on fresh milk): 0.5μg/kg	Purification→Extraction→Concentration→Thin-Layer separation→ Determination by ultraviolet lamp	GB/T 5009.24-2010National food safety standard Determination of aflatoxin M1 and B1 in foods
Deoxynivalenol (DON)	wheat: 1,000μg/kg; corn: 1,000μg/kg	1. Thin-Layer Chromatography (TLC) Extraction→Purification→Concentration→Thin-Layer separation→Determination by ultraviolet lamp 2. Enzyme-Linked Immunosorbent Assay (ELISA) Extraction→Purification→Concentration→Determination by enzyme-labeled instrument	GB/T 5009.111-2003 Determination of deoxynivalenol in cereal and cereal products
Patulin	apple and hawthorn products: 50μg/kg	Extraction→Purification→Concentration→Thin-Layer separation→determination by thin layer chromatogram scanner	GB/T 5009.185-2003 Determination of patulin in apple and hawthorn products
Acid value (Count as fat)	Not more than 1.8 KOH/mg/g (Fried )	1) Extract fat by petroleum ether (GB/T5009.56) 2) Acid value: potassium hydroxide solution titration Peroxide value: a) potassium iodide solution titration b) ferric thiocyanate colorimetric method Carbonly value: dinitrophenylhydrazine colorimetric method	GB/T 5009.56 GB/T 5009.37
Peroxide value (Count as fat)	Not more than 0.25 g/100g (Fried )		
Carbonly value (count as fat)	Not more than 20 (meq/kg)		


Bacteria	Not more than 1,000,000 (Limited to alcohol-treated products) Not more than 100,000 (Limited to pasteurized products)	Plate count agar (35±1°C 24-48h)	Korea Food Code (Article 10.3.5.1)
<i>E. coli</i>	Negative (Limited to alcohol-treated products)	EC fermentation tube (44.5°C 24±2h) → Gas generation: Presumptive test positive → EMB medium (35±1°C 24±2h) → Lactose broth fermentation tube and nutrient agar. The lactose broth fermentation tube (35±1°C 48±3h): gas generation → The nutrient agar (35±1°C 24±2h): microscopic test → Gram-negative nonspore-forming bacilli: <i>E. coli</i> positive	Korea Food Code (Article 10.3.8)
Coliform	Negative (Limited to pasteurized products)	LB fermentation tube (35±1°C 48±3h) → Gas generation: Presumptive test positive → BGLB fermentation tube (35±1°C 48±3h) → Gas generation → EMB medium (35±1°C 24±2h) → Typical colony: Confirmative test positive → Lactose broth fermentation tube and nutrient agar. The lactose broth fermentation tube (35±1°C 48±3h): gas generation → The nutrient agar (35±1°C 48±3h): microscopic test → Gram-negative nonspore-forming bacilli: Coliform positive	Korea Food Code (Article 10.3.7)



Tbc	Not more than 1,000 cfu/g (Fried) Not more than 50,000 cfu/g (Non-fried)	Difference with FDA/BAM, Chapter 3: Aerobic plate count, 2001 - Appropriate enumeration scope of plate counts computed change to 30 CFU ~ 300 CFU from 25 CFU ~ 250 CFU. - Incubate temperature change to 36 ± 1°C from 35 ± 1°C. - 10 times dilution, change to transferring 1ml of previous dilution to 9 ml of diluent from transferring 10ml of previous dilution to 90 ml - do not adopt the Spiral Plate Method	GB 4789.2
Coliform group	Not more than 30 MPN/100g (Fried) Not more than 150 MPN/100g (Non-fried)	Difference with FDA/BAM, Chapter 4: Enumeration of Escherichia coli and the coliform bacteria, 2002 - Appropriate enumeration scope of plate counts computed change to 15 CFU ~ 150 CFU from 25 CFU ~ 250 CFU.. - Incubate temperature change to 36 ± 1°C from 35 ± 1°C. - Sample size change to 25g (or 25ml) form 50g (or 50ml)	GB 4789.3
moisture content	Not more than 8g/100g (Fried ) Not more than 12g/100g (Non-fried)	1) direct drying method 2) reduced pressure drying method 3) distillationmethod 4) karl-fischer method	GB 5009.3
Pb	Not more than 0.5 mg/kg	1. Graphite furnace atomic absorption spectrometry Sample preparation → ashing or digesting → standard solution preparation → determination by instrument. 2. Hydride Generation-atomic Fluorescence Spectrophotometry Sample preparation → digestion → standard solution preparation → determination 3. Flame Atomic Absorption Spectrometric analysis (FAAS) Sample preparation → extraction and separation → determination by instrument 4. Double sulphur hydrazone colorimetry Sample preparation → digestion → standard solution preparation → determination by spectrophotometer 5. Single-Sweep Polarography Sample preparation → digestion → standard solution preparation → determination by polarographic analyze	GB 5009.12
Total As	Not more than 0.5 mg/kg	1. The determination of total arsenic 1.1 Hydride Generation-atomic Fluorescence Spectrophotometry Wet digestion or dry ashing → standard solution preparation → determination by AFS 1.2 Silver salt method Wet digestion or dry ashing → standard solution preparation → determination by spectrophotometer 1.3 Method of Spot of arsenic Wet digestion or dry ashing → standard solution preparation → determination by arsenic apparatus 1.4 Borohydride Reduction Colorimetric Method Wet digestion or dry ashing → standard solution preparation → determination by spectrophotometer 2. The determination of abio-arsenic 2.1 Hydride Generation-atomic Fluorescence Spectrophotometry The extraction of abio-arsenic → standard solution preparation → determination by AFS 2.2 Silver salt method The extraction of abio-arsenic → standard solution preparation → determination by spectrophotometer	GB/T 5009.11
Pathogen	Negative	a) Enrichment with BPW/TTB/SC medium, and confirm through biochemical and serological characteristics. b) Enrichment with GE, HE/SS and EMB agar, and confirm through biochemical and serological characteristics. c) 1) Enrichment and identify with coloration and coagulase test 2) Baird-Parker plate count 3) Staphylococcus MPN count	GB 4789.4 GB 4789.10 GB/T 4789.5 GB/T4789.12
Peroxide value (count as fat)	Not more than 20 meq/100g (Fried )	1) Extract fat by petroleum ether (GB/T5009.56) 2) Acid value: potassium hydroxide solution titration Peroxide value: a) potassium iodide solution titration	GB/T5009.56 GB/T 5009.37 GB 5009.12 GB/T 5009.11
Fat	Not more than 24% (Fried )		GB/T 14772
iod Value	More than 1.0	Identified by indic colorific mensuration	GB 601 GB/T5009.56
NaCl	Not more than 2.5%	Titration by standard solution of silver nitrate.	GB 601

Soft drink beverages

Turbid	must not turbid (with the exception)	Visual test	Described in specifications and standards for foods, food additives, etc.	
Sediment	must not turbid (with the exception)	Visual test		
Arsenic	must not detected	Wet decomposition or dry decomposition, followed by colorimetric method		
Lead	must not detected	Wet decomposition or dry decomposition, followed by polarography		
Cadmium	must not detected			
Tin	150.0ppm以下	Wet decomposition or dry decomposition, followed by colorimetric or polarography		
Coliform bacilli	negative	Presumptive test (BTB lactose broth) → Confirmation test (Endo or EMB culture medium, or BGLB fermentation tube) → Conclusive test (Lactose broth fermentation tube and agar slant)		
Patulin	must not exceed 0.050 ppm	Extraction with solvent → Quantification by LC, Confirmation by LC-MS or GC-MS		

Soft drink beverages

Lead (mg/kg)	Not more than 0.3	Wet degradation method, Dry incineration method, or Solvent Extraction method → Inductively Coupled Plasma Spectrometry (ICP)	Korea Food Code (2010, 7.1.2.1)	
Cadmium (mg/kg)	Not more than 0.1		Korea Food Code (2010, 7.1.2.2)	
Tin (mg/kg)	Not more than 150 (Limited to canned products)	Wet degradation method or Dry incineration method → Salicylidenamino-2-thiophenol (SATP) method or Polarographic analysis	Korea Food Code (2010, 7.1.2.6)	
Coliform	Negative (Limited to pasteurized products)	LB fermentation tube (35±1°C 48±3h) → Gas generation: Presumptive test positive → BGLB fermentation tube (35±1°C 48±3h) → Gas generation → EMB medium (35±1°C 24±2h) → Typical colony: Confirmative test positive → Lactose broth fermentation tube and nutrient agar. The lactose broth fermentation tube (35±1°C 48±3h): gas generation → The nutrient agar (35±1°C 48±3h): microscopic test → Gram-negative nonspore-forming bacilli: Coliform positive	Korea Food Code (Article 10.3.7)	
Bacteria	Not more than 100/ml	Plate count agar (35±1°C 24-48h)	Korea Food Code (10.3.5.1)	

Soft drink beverages

Recovery time	Not more than 4.0 min (Fried)	Place noodle in an insulation container with cover face; Add about five times weight boiling water as many as the noodle; Close the container and time-stamped. When using a piece of glass clamping softening noodles, observe gelatinization state without obvious hard heart, record the recovery time.	
	Not more than 6.0 min (Non-fried)		
Weight variance	Not more than 3% of declared weight	Weight the packages Noodle three times by 0.5g sensitivity scales; Compared with the declared weight; Claculated deviation	
Tbc	Not more than 1,000 count/g	Difference with FDA/BAM, Chapter 3: Aerobic plate count, 2001 - Appropriate enumeration scope of plate counts computed change to 30 CFU ~ 300 CFU from 25 CFU~250 CFU. - Incubate temperature change to 36 ± 1°C from 35 ± 1°C. - 10 times dilution, change to transferring 1ml of previous dilution to 9 ml of diluent from transferring 10ml of previous dilution to 90 ml - do not adopt the Spiral Plate Method	GB 4789.4 GB 4789.10 GB/T 4789.5 GB/T4789.12
Coliform group	Not more than 30 count/100g	Difference with FDA/BAM, Chapter 4: Enumeration of Escherichia coli and the coliform bacteria, 2002 - Appropriate enumeration scope of plate counts computed change to 15 CFU ~ 150 CFU from 25 CFU~250 CFU.. - Incubate temperature change to 36 ± 1°C from 35 ± 1°C. - Sample size change to 25g (or 25ml) form 50g (or 50ml)	GB 4789.3
Total Arsenic	≤ 0.2 mg/L (as of Arsenic)	1) Wet degradation method or Dry incineration method 2) Gutzeit method or Silver diethyldithiocarbamate method 3) Arsenic Stain Measurement method 4) Deoxidization and colorimetry method	Determination of total arsenic and abio-arsenic in foods (GB5009.11)
Lead	≤ 0.3 mg/L	1) Wet degradation method or Dry incineration method 2) Atomic absorption spectrophotometry 3) Polarographic analysis 4) Dithizone colorimetry method	National food safety standard -- Determin of lead in food (GB5009.12)
Coliform	≤ 6 MPN/100ml	1) Coliforms MPN count 2) Coliforms plate count	National food safety standard --Food microbiological examination: Enumeration of coliforms (GB4789.3)
Total plate count	≤ 100 cfu/ml	Cultured with PCA culture medium and count	National food safety standard -- Food microbiological examination : Aerobic plate count (GB4789.2)
Mold	≤ 10 cfu/ml	Cultured with Rose Bengal Medium and count	National food safety standard Food microbiological examination: Enumeration of moulds and yeasts (GB4789.15)
Yeast	≤ 10 cfu/ml	Cultured with Rose Bengal Medium and count	National food safety standard Food microbiological examination: Enumeration of moulds and yeasts (GB4789.15)



	Coliform group	negative	Desoxycholate agar culture→Presumptive test→Confirmation test									Salmonella	Negative	Agar plate count→serology test	GB 4789.4			
	Most probable number of <i>Vibrio parahaemolyticus</i>	not more than 100/g	Alkaline peptone water culture→TCBS agar culture									Shigella	Negative	Biochemical test→serology test	GBT 4789.5			
												<i>Staphylococcus aureus</i>	Negative	Biochemical test→plasma-coagulase test	GB 4789.10			
												Mold	≤50cfu/g (heated before freezing)	Microscopic examination count method	GB 4789.15			
												<b>Fresh and frozen poultry product</b>	Mercury	0.05mg/kg	Dry incineration method→Atomic fluorophotometer			
												<b>Hygienic standard for fresh and frozen marine products from animal origin</b>	Cadmium (For fish)	0.1mg/kg	Dry incineration method→Atomic absorption spectrophotometry	GBT 5009.15		
<b>Cow's milk</b>	<b>Milk for drinking</b>	Specific gravity (15°C)	1.028~1.034 <b>Note 1)</b> 1.028~1.036 <b>Note 2)</b>	Floatage type lactometer	Ministerial Ordinance on Milk and Milk Products Concerning Compositional Standards, etc.	<b>Cow's milk</b>	Specific Gravity(at 15°C)	1.028~1.034	Measure specific gravity of sample after standing until there is no bubble using a hydrometer at 15°C	Notification on Standard and Specification of Livestock Products (No. 2010-2)	<b>Cow's milk</b>	<b>Pasteurized milk</b>						
		Acidity (as lactic acid %)	not more than 0.18 <b>Note 3)</b> not more than 0.20 <b>Note 3)</b>	Titration with NaOH solution				Acidity (as lactic acid %)	<0.18%		Titration of 20 ml sample (10 ml milk + 10 ml distilled water) with 0.1 N sodium hydroxide solution				Acidity (°T)	≥12~18	GB 5413.34 Determination of acidity in milk and milk products	
		Nonfat milk solids (%)	not less than 8.0	Subtraction of milk fat from dried weight				Nonfat milk solid (%)	8.0% <		Dry 5g milk at 98~100°C to get dried material % and then subtract milk fat (%)				NFMS (g/100g)	≥8.1	GB 5413.39 Determination of nonfat total milk solid in milk and milk products	
		Milk fat (%)	not less than 3.0	Gerber lactobutyrometer				Milk fat (%)	3.0% <		Gerber Method				Fat (g/100g) (Only for full cream pasteurized milk)	≥3.1	GB 5413.3 Determination of fat in foods for infants and young children, milk and milk products	
		Bacterial count/ml	not more than 50,000 <b>Note 4)</b>	Standard agar medium				Bacteria (counts/ml)	Not more than 20,000/ml		Aerobic Plate Count agar (35±1°C 48h or 30±1°C 72h)				TPC (CFU/g or CFU/ml)	n=5; c=2 m=50,000; M=100,000	GB 4789.2 Food microbiological examination: Aerobic plate count	GB 4789.2
		Coliform group	negative	BGLB culture→ Presumptive test→ Confirmation test				Coliform	Not more than 2/ml (negative for pasteurized product)		MPN (Most Probable Number) Method Desoxycholate agar (35±1°C 24±2h) or Dehydrated coliform film (35±1°C 24±2h)				Coliform (CFU/g or CFU/ml)	n=5; c=2 m=1; M=5	GB 4789.3 Food microbiological examination: Enumeration of coliforms (plate count method)	GB 4789.3
															Protein (g/100g)	≥2.9	GB 5009.5 Determination of protein in foods	
													Mycotoxins	see GB 2761 Maximum levels of mycotoxins in foods		GB 2761		
													<i>Staphylococcus aureus</i>	n=5; c=0 0.25g (ml)	GB 4789.10 Food microbiological examination: <i>Staphylococcus aureus</i> (Qualitative test)	GB 4789.10		
													Salmonella	n=5; c=0 0.25g (ml)	GB 4789.4 Food microbiological examination: Salmonella	GB 4789.4		

Note 1): Those using milk of cows other than Jersey cows only as raw materials.

Note 2): Those using milk of Jersey cows only as raw materials.

Note 3): In the case of a product storable at normal temperature, increase shall be within 0.02%, after stored at 29 to 31°C for 14 days or at 54 to 56°C for 7 days.

Note 4): In the case of a product storable at normal temperature, the count of bacteria shall be zero when stored at 29 to 31°C for 14 days or at 54 to 56°C for 7 days.