



## Agenda Item 4

CX/MAS 18/39/4  
March 2018

### JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON METHODS OF ANALYSIS AND SAMPLING

Thirty-ninth Session  
Budapest, Hungary, 7 – 11 May 2018

#### REVISION OF THE RECOMMENDED METHODS OF CODEX STAN 234 / REVIEW AND UPDATE OF CODEX STAN 234

Prepared by the Electronic Working Group led by Brazil and co-chaired by Uruguay

Codex members and Observers wishing to submit comments on the Revision Of The Recommended Methods of CODEX STAN 234 / Review And Update of CODEX STAN 234 (Appendix I to this document) should do so as instructed in CL 2018/18/OCS-MAS available on the Codex webpage/Circular Letters 2018: <http://www.fao.org/fao-who-codexalimentarius/circular-letters/en/>.

#### **Background**

1. The CCMAS38 agreed on new work to address the preamble, scope, structure and other relevant information aiming to facilitate the reading of the methods listed in CODEX STAN 234. The new work was approved by CAC40.
2. CCMAS38 agreed that an electronic working group (EWG), chaired by Brazil and Uruguay, would address the new work as mentioned above and continue work on the review and update of methods of analysis and sampling plans in CXS 234-1999 through workable packages.
3. The Proposed Preamble and Format to *General Standard on Recommended Methods of Analysis and Sampling* (CXS 234-1999) is in Appendix I.
4. The *Recommended Methods of Analysis and Sampling* (CXS 234-1999) (Appendix I) is a result of the discussion of the EWG and the comments made to the previous documents (CX/MAS 17/38/6, CL 2017/4 – MAS, CX/MAS 17/38/6 - Add.1, MAS/38 CRD3).
5. Comments were received from Canada, Iran, Switzerland, Tunisia and the International Dairy Federation (IDF). The complete list of participants is in Appendix II.
6. Brazil and Uruguay want to express their gratitude to all members for their interest and for active contributions.

#### **Main issues discussed in the eWG**

7. The main focus of the discussions was the annexes (list of commodities categories and names, list of provisions and list of the principles of the methods), both for their need and for their content.
8. The review and update of methods of analysis and sampling plans in CXS 234 through workable packages are presented in Appendix II and will be considered by the PWG on endorsement of methods.
9. As previously highlighted, the same provision and principle for the same method are mentioned differently and it is advisable to harmonize them. To address the issue a harmonized list of provisions and principles was included to be used by CCMAS and Committees.
10. Both lists, principle and provision, have two columns, the first as it is currently mentioned in CXS 234 or another Codex document and the second is the suggestion for harmonization.
11. Provisions names were included, such as some mycotoxins from CXS 193-1995 and some principles from other CCMAS documents such as CXS 231-2001.
12. A list of commodities categories was also suggested, because this list is important to define for which commodities the method is applied. For example, there are many methods applied generically to "Processed fruits and vegetables". The starting point for the construction of the list was the food

categorization of the general standard of food additives, but only those categories that have a specific Codex standard or provisions were placed.

13. The lists are provisional with the purpose of standardization. They reflect the current status, but must be updated according to the approvals or revocations made by CCMAS, with the possibility to include or exclude elements as needed. They should be available to Commodity Committees in order to allow the harmonization.

14. Another issue discussed in the group was the definition of identical methods and technically equivalent methods.

#### **Recommendations**

15. The Committee is invited to consider:

- the proposed draft version of CODEX STAN 234 presented in Appendix I as the structure of a searchable database;
- the Annexes 1, 2 and 3 of the Appendix I.

**Appendix I****Proposed Preamble and Format to General Standard on Recommended Methods of Analysis and Sampling****(CXS 234-1999)****(for comments through OCS CL 2018/18-MAS)****INTRODUCTION**

This Standard is intended to provide a single reference to Codex recommended methods of analysis and sampling for food.

The recommended methods are primarily intended to allow competent national and/or regional authorities to select methods of analysis and sampling for food, as appropriate for their purpose, as acceptable methods for the verification of provisions in Codex standards.

It is recommended that this Standard should be read in conjunction with the related Codex standards, guidelines and other documents<sup>1</sup>.

In case of disputes of analytical results, guidance is given in the *Guidelines for Settling Disputes over Analytical (Test) Results* (CXG 70-2009), including guidance on the use of methods of analysis.

When confirming compliance to a Codex standard the methods of analysis and sampling contained in this General Standard that relates to the provision identified in the commodity standard shall be used.

This Standard consists of three main parts and three annexes:

PART I. PREAMBLE

PART II. RECOMMENDED METHODS OF ANALYSIS

SECTION I - STANDARDIZED METHODS OF ANALYSIS BY COMMODITY CATEGORIES

SECTION II - METHODS PERFORMANCE CRITERIA

SECTION III. COMPLETE DESCRIPTION OF THE METHOD OF ANALYSIS

PART III. RECOMMENDED METHODS OF SAMPLING BY COMMODITY CATEGORIES AND NAMES

Annex 1: LIST OF COMMODITIES CATEGORIES AND NAMES

Annex 2: LIST OF PROVISIONS

Annex 3: LIST OF THE PRINCIPLES OF THE METHODS

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<sup>1</sup> *Harmonized IUPAC Guidelines for the Use of Recovery Information in Analytical Measurement* (CXG 37-2001), *Harmonized IUPAC Guidelines for Single-Laboratory Validation of Methods of Analysis* (CXG 49-2003), *Guidelines on Sampling* (CXG 50-2004), *Guidelines on Measurement Uncertainty* (CAC/GL 54-2004), *Protocol for the Design, Conduct and Interpretation of Method Performance Studies* (CXG 64-1995), *Harmonized Guidelines for Internal Quality Control in Analytical Chemistry Laboratories* (CXG 65-1997)

## PART I - PREAMBLE

### 1. Scope

This Standard contains definitions, lists of methods of analysis, methods performance criteria, descriptions of some methods and a list of methods of sampling which are recommended by the Codex Alimentarius Commission (CAC) to verify the provisions in Codex standards to be applied to commodities moving in international trade.

### 2. Definition of Terms

**2.1 Codex Method of Analysis:** methods for the verification of provisions in Codex standards. The methods are classified as Defining Methods (Type I), Reference Methods (Type II), Alternative Approved Methods (Type III), & Tentative Methods (Type IV) (see Codex Procedural Manual, Section II: Elaboration of Codex texts, Definition of types of methods of analysis).

**2.2 Identical methods and/or collaboratively developed:** when the same method was published by several Standards Development Organizations (SDO), each SDO using its own format. The only difference between these methods is the fact that they were formatted and written differently.

**2.3 Technically equivalent methods:** methods that deliver the same result and where several elements of two methods are technically comparable but not identical: e.g. sample preparation, extraction, cleanup, identification technology (e.g. LC-UV). The methods should have validation parameters fit for purpose and meet with equivalent test results, ideally confirmed by the analysis of a series of common samples. Equivalent test results means results with the same metrological traceability and a measurement uncertainty fit for purpose.

**2.4 Method of Analysis Principle:** The science-based analytical principle of the method of analysis, described concisely, focusing on the technique.

**2.5 Provision:** a measurand or analyte being verified by analysis to determine conformity to a Codex Standard. Alternatively, a quality criterion of a commodity, with acceptance limits specified by the standard, which need to be confirmed by analysis for the commodity to conform with that standard.

## PART II - RECOMMENDED METHODS OF ANALYSIS

This part contains 3 sections depending on how the methodologies are proposed, endorsed and approved by CAC:

### SECTION I. STANDARDIZED METHODS OF ANALYSIS BY COMMODITY CATEGORIES

This section contains:

- a) The name of the commodity (to choose from Annex 1);
- b) The provision to which the methods apply (to choose from Annex 2);
- c) Codex Standard to which the method is directed;
- d) Identification of the method;
- e) Method of Analysis Principle (to choose from Annex 3);
- f) Type of analytical method;
- g) The year of endorsement by CCMAS;
- h) Codex Committee responsible for the Standard and/or provision.

When there is no standardized method, the file identification of the method sends to section II (Methods Performance Criteria) or section III (Complete description of the method of analysis)

### SECTION II. METHODS PERFORMANCE CRITERIA

This section contains:

- a) The name of the commodity (to choose from Annex 1);
- b) The provision to which the methods apply (to choose from Annex 2);
- c) Codex Standard to which the method is directed;
- d) Minimum applicable range;
- e) Limit of detection (LOD);
- f) Limit of quantification (LOQ);

- g) RSD<sub>R</sub> (Relative Standard Deviation of Reproducibility);
- h) % Recovery;
- i) Suggested methods that meet the criteria and their principles also can be mentioned. However, any method which complies with the established performance criteria can be used.

### SECTION III. COMPLETE DESCRIPTION OF THE METHOD OF ANALYSIS

This section contains:

- a) The name of the commodity (to choose from Annex 1);
- b) The provision to which the methods apply;
- c) Description.

### PART II - RECOMMENDED METHODS OF ANALYSIS

The most updated version of the method should be used in application of ISO/IEC 17025:2005 unless it is not appropriate or possible to do so.

Each line of the standardized methods list corresponds to one method of analysis or more than one if they are necessary to reach a result, in this case they are called complementary. When the methods are in the same line separated by a vertical bar “|” they are considered identical or by a forward slash “/” when they are considered technically equivalent. Alternative methods are listed in different lines. When more than one method is needed to verify the provision, the methods be listed with an “and” between the methods required. When a method is determined by calculation can be used one line with the method and a brief description of the calculation in the principle column.

Type II methods could be used for any purpose in line with the Procedural Manual, for reference, in calibration of methods in use or introduced, for routine examination and control purposes.

Methods Type III and IV can also be used in cases of disputes, if it was agreed between the respective competent authorities, according to the *Guidelines for Settling Disputes on Analytical (Test) Results* (CXG 70-2009). There is also an option for two countries to agree on an acceptable method.

For the same commodity and provision more than one Type I and Type II methods may be used when they are identical or technically equivalent methods.

*Observation: The examples below will be deleted in the agreed document.*

### SECTION I - STANDARDIZED METHODS OF ANALYSIS BY COMMODITY CATEGORIES

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorsement	Committee
Processed fruits and vegetables	Benzoic acid	CXS 13	NMKL 124	Liquid Chromatography	II		CCPFV/CCFA
Processed fruits and vegetables	Fill of containers (metals containers)	CXS 13	<a href="#">CAC/RM 46</a> ( link to complete description on Section III)	Weighing	I		CCPFV
Natural Mineral Waters	Mercury	CXS 108	See Section II (link to section II)				CCNMW

### SECTION II - METHODS PERFORMANCE CRITERIA

Commodity	Provision	Applicable Codex Stan	Minimum applicable range	LOD	LOQ	RSD <sub>R</sub> (%)	Recovery (%)	Applicable methods that meet criteria	Principle
Natural Mineral Waters	Mercury	108-1981	0.00056 mg/L	0.0002 mg/L	0.0004 mg/L	44	80-110	EN 1483 ISO 17852 ISO 5666 ISO 16590 EPA 200.8	AAS Enrichment by amalgamation (III) AFS AAS after tin(II) chloride reduction Enrichment by amalgamation (III) ICP-MS

**SECTION III. COMPLETE DESCRIPTION OF THE METHOD OF ANALYSIS**

Commodity	Provision
Processed fruits and vegetables	Fill of (metals) container
<b>DESCRIPTION OF THE METHOD: DETERMINATION OF WATER CAPACITY OF CONTAINERS (CAC/RM 46)</b>	
<b>1. SCOPE</b>	
This method applies to glass containers.	
<b>2. DEFINITION</b>	
The water capacity of a container is the volume of distilled water at 20°C which the sealed container will hold when completely filled.	
<b>3. PROCEDURE</b>	
3.1 Select a container which is undamaged in all respects.	
3.2 Wash, dry and weigh the empty container.	
3.3 Fill the container with distilled water at 20°C to the level of the top thereof, and weigh the container thus filled.	
<b>4. CALCULATION AND EXPRESSION OF RESULTS</b>	
Subtract the weight found in 3.2 from the weight found in 3.3. The difference shall be considered to be the weight of water required to fill the container. Results are expressed as mL of water.	

**PART III- RECOMMENDED METHODS OF SAMPLING BY COMMODITY CATEGORIES AND NAMES**

Commodity Categories	Method of Sampling	Notes
Cereals, Pulses and Legumes and Derived Products		
Wheat protein products including wheat gluten	ISO 13690	
Fats and Oils		
Olive Oils and Olive-Pomace Oils	ISO 661 and ISO 5555.	
Fish oils	ISO 5555	
Milk and milk products		
Milk products	ISO 707   IDF 50	General instructions for obtaining a sample from a bulk
Milk products	ISO 5538   IDF 113	Inspection by attributes
Milk products	ISO 3951-1	Inspection by variables
Processed Fruits and Vegetables		
Desiccated coconut	Described in the Standard	
Certain canned vegetables, jams and jellies	Described in the Standard	
Chili sauce	Described in the Standard	
Table Olives	Described in the Standard	

**Annex 1: LIST OF COMMODITIES CATEGORIES AND NAMES**

This list serves as an inventory of commodities to choose from in order to refer to the commodity (or a group of commodities) in a consistent manner in the other sections of this standard.

1. Fruits and Vegetables
  - 1.1. Canned Fruits and Vegetables
    - 1.1.1. Pineapple
    - 1.1.2. Raspberries
    - 1.1.3. Strawberries
    - 1.1.4. Stone Fruits
    - 1.1.5. Certain Citrus Fruits
    - 1.1.6. Bamboo Shoots
    - 1.1.7. Certain Vegetables
    - 1.1.8. Humus with Tehena
    - 1.1.9. Foul Medames
  - 1.2. Canned Fruits Products
    - 1.2.1. Apple Juice
    - 1.2.2. Tropical Fruit Salad
    - 1.2.3. Fruit Cocktail
    - 1.2.4. Chestnut Purée
  - 1.3. Quick Frozen Fruits and Vegetables
    - 1.3.1. Strawberries
    - 1.3.2. Peaches
    - 1.3.3. Raspberries
    - 1.3.4. Bilberries
    - 1.3.5. Blueberries
    - 1.3.6. Peas
    - 1.3.7. Spinach
    - 1.3.8. Broccoli
    - 1.3.9. Cauliflower
    - 1.3.10. Brussels Sprouts
    - 1.3.11. Green Was Beans
    - 1.3.12. French Fried Potatoes
  - 1.4. Dehydrated/ Desiccated Fruit and Vegetables
    - 1.4.1. Coconut
    - 1.4.2. Raisins
    - 1.4.3. Dates
    - 1.4.4. Apricots
    - 1.4.5. Dehydrated Edible Fungi
  - 1.5. Nuts, Tree Nuts and Ground Nuts
    - 1.5.1. Pistachio
    - 1.5.2. Chestnuts
    - 1.5.3. Peanuts
    - 1.5.4. Brazil nuts
  - 1.6. Other Processed fruits and vegetables
    - 1.6.1. Vegetables
      - 1.6.1.1. Kimchi
      - 1.6.1.2. Ginseng

- 1.6.1.3. Olives
- 1.6.1.4. Aqueous Coconut Products (Coconut Milk, Coconut Cream)
- 1.6.1.5. Mango Chutney
- 1.6.1.6. Gochujang
- 1.6.1.7. Chili Sauce
- 1.6.1.8. Laver
- 1.7. Fresh Vegetables
  - 1.7.1. Fresh Fungus "Chanterelle"
  - 1.7.2. Culantro Coyote (LAC)
  - 1.7.3. Tahena
  - 1.7.4. Lucuma
- 2. Meat and Poultry products
  - 2.1. Fresh meat, poultry, and game
  - 2.2. Fresh meat, poultry and game, whole pieces or cuts
  - 2.3. Fresh meat, poultry and game, comminuted
  - 2.4. Processed meat, poultry, and game products in whole pieces or cuts
    - 2.4.1. Non-heat treated processed meat, poultry, and game products in whole pieces or cuts
      - 2.4.1.1. Cured (including salted) non-heat treated processed meat, poultry, and game products in whole pieces or cuts
      - 2.4.1.2. Fermented non-heat treated processed meat, poultry, and game products in whole pieces or cuts
    - 2.4.2. Heat-treated processed meat, poultry, and game products in whole pieces or cuts
    - 2.4.3. Frozen processed meat, poultry and game products in whole pieces or cuts
  - 2.5. Processed comminuted meat, poultry, and game products
    - 2.5.1. Non-heat treated processed comminuted meat, poultry, and game products
      - 2.5.1.1. Cured (including salted) non-heat treated processed comminuted meat, poultry, and game products
      - 2.5.1.2. Fermented non-heat treated processed comminuted meat, poultry, and game products
    - 2.5.2. Heat-treated processed comminuted meat, poultry, and game products
    - 2.5.3. Frozen processed comminuted meat, poultry, and game products
- 3. Foodstuffs intended for particular nutritional uses
  - 3.1. Infant formulae, follow-on formulae, and formulae for special medical purposes for infants
  - 3.2. Complementary foods for infants and young children
  - 3.3. Dietetic formulae for slimming purposes and weight reduction
  - 3.4. Special Dietary Foods
    - 3.4.1. Gluten-free foods
    - 3.4.2. Low Sodium Content
  - 3.5. Foods for special medical purpose
- 4. Sugars and Sweeteners, including honey
  - 4.1. Refined and raw sugars
    - 4.1.1. White sugar
    - 4.1.2. Dextrose anhydrous
    - 4.1.3. Dextrose monohydrate
    - 4.1.4. Fructose (laevulose)
    - 4.1.5. Powdered sugar (icing sugar)
    - 4.1.6. Powdered dextrose (icing dextrose)
    - 4.1.7. Soft white sugar
    - 4.1.8. Soft brown sugar



- 4.1.9. Glucose syrup
- 4.1.10. Dried glucose syrup
- 4.1.11. Raw cane sugar
- 4.1.12. Dried glucose syrup used to manufacture sugar confectionery
- 4.1.13. Glucose syrup used to manufacture sugar confectionery
- 4.1.14. Lactose
- 4.1.15. Plantation or mill white sugar
- 4.1.16. Demerara sugar
- 4.2. Sugar solutions and syrups, also (partially) inverted, including treacle and molasses
  - 4.2.1. Treacle
  - 4.2.2. Molasses
  - 4.2.3. Invert sugar
  - 4.2.4. High fructose corn syrup
  - 4.2.5. High fructose inulin syrup
  - 4.2.6. Corn sugar.
  - 4.2.7. Xylose
  - 4.2.8. Maple syrup
  - 4.2.9. Caramel syrup
  - 4.2.10. Flavored syrups
  - 4.2.11. Decorative sugar toppings
  - 4.2.12. Colored sugar crystals for cookies
- 4.3. Honey
  - 4.3.1. Blossom Honey or Nectar honey
  - 4.3.2. Honeydew honey
- 4.4. Table-top sweeteners, including those containing high-intensity sweeteners
  - 4.4.1. Acesulfame potassium
  - 4.4.2. Sorbitol
- 5. Vegetable Proteins
  - 5.1. Wheat Protein Products
    - 5.1.1. Vital wheat gluten
    - 5.1.2. Devitalized wheat gluten or devital wheat gluten
    - 5.1.3. Solubilized wheat protein or soluble wheat protein
    - 5.1.4. Vegetable protein products
    - 5.1.5. Edible sago flour
  - 5.2. Soy protein products
    - 5.2.1. Soy protein flour
    - 5.2.2. Soy protein concéntrate
    - 5.2.3. Soy protein isolate
    - 5.2.4. Fermented soybean paste
    - 5.2.5. Non fermented soyben product
    - 5.2.6. Tempe
- 6. Cereals, Pulses and Legumes
  - 6.1. Whole, broken, or flaked grain
    - 6.1.1. Maize Corn
    - 6.1.2. Whole maize corn meal
    - 6.1.3. Degermed maize (corn) meal
    - 6.1.4. Degermed maize (corn) grits
    - 6.1.5. Whole pearl millet grains
    - 6.1.6. Decorticated pearl millet grains
    - 6.1.7. Whole, shelled or split pulses

- 6.1.8. Whole sorghum grains
- 6.1.9. Decorticated sorghum grains
- 6.1.10. Wheat
- 6.1.11. Durum wheat
- 6.1.12. Peanuts
- 6.1.13. Oats
- 6.1.14. Couscous
- 6.1.15. Rice
- 6.1.16. Paddy rice
- 6.1.17. Husked rice
- 6.1.18. Milled rice
- 6.1.19. Parboiled rice
- 6.1.20. Glutinous rice
- 6.1.21. Waxy rice
- 6.2. Flours and starches
  - 6.2.1. Flours
    - 6.2.1.1. Gari
    - 6.2.1.2. Wheat flour
    - 6.2.1.3. Pearl millet flour
    - 6.2.1.4. Sorghum flour
    - 6.2.1.5. Edible cassava flour
    - 6.2.1.6. Durum wheat semolina
    - 6.2.1.7. Durum wheat flour
    - 6.2.1.8. Edible sago flour
  - 6.2.2. Starches
- 6.3. Breakfast cereals
- 6.4. Pastas and noodles and like products
  - 6.4.1. Fresh pastas and noodles and like products
  - 6.4.2. Dried pastas and noodles and like products
  - 6.4.3. Pre-cooked pastas and noodles and like products
    - 6.4.3.1. Fried noodles
    - 6.4.3.2. Non- fried noodles
- 6.5. Cereal and starch based desserts
- 6.6. Batters
- 6.7. Pre-cooked or processed rice products, including rice cakes (Oriental type only)
- 6.8. Soybean products
  - 6.8.1. Soybean-based beverages
    - 6.8.1.1. Plain soybean beverage
    - 6.8.1.2. Composite/flavored soybean beverage
    - 6.8.1.3. Soybean-based beverages
  - 6.8.2. Soybean-based beverage film
  - 6.8.3. Soybean curd (tofu)
  - 6.8.4. Semi-dehydrated soybean curd
    - 6.8.4.1. Thick gravy-stewed semi-dehydrated soybean curd
    - 6.8.4.2. Deep fried semi-dehydrated soybean curd
    - 6.8.4.3. Semi-dehydrated soybean curd
  - 6.8.5. Dehydrated soybean curd (kori tofu)
    - 6.8.5.1. Dehydrated soybean curd film
  - 6.8.6. Fermented soybeans (e.g. natto, tempe)
    - 6.8.6.1. Fermented soybean paste

- 6.8.6.2. Tempe
- 6.8.7. Fermented soybean curd
  - 6.8.7.1. Soybean curd
  - 6.8.7.2. Semisolid soybean
  - 6.8.7.3. Compressed soybean curd
- 6.8.8. Other soybean protein products
- 7. Fats and Oils
  - 7.1. Fats and oils, and fat emulsions
    - 7.1.1. Fats and oils essentially free from water
      - 7.1.1.1. Butter oil, anhydrous milkfat, ghee
      - 7.1.1.2. Vegetable oils and fats
      - 7.1.1.3. Lard, tallow, fish oil, and other animal fats
    - 7.1.2. Fat emulsions mainly of type water-in-oil
      - 7.1.2.1. Butter
      - 7.1.2.2. Shea Butter
      - 7.1.2.3. Fat spreads, dairy fat spreads and blended spreads
    - 7.1.3. Fat emulsions mainly of type oil-in-water, including mixed and/or flavoured products based on fat emulsions
    - 7.1.4. Fat-based desserts excluding dairy-based dessert products of food category 8.4.7.
  - 7.2. Edible ices, including sherbet and sorbet
- 8. Milk and Milk Products
  - 8.1. Fluid, Cream and Milk Powder
    - 8.1.1. Fluid Milk
    - 8.1.2. Whole Milk Powder
    - 8.1.3. Partly Skimmed Powder
  - Skimmed Milk Powder
    - 8.1.4. Cream Powder
    - 8.1.5. Half Cream Powder
    - 8.1.6. High Fat Cream Powder
  - 8.2. Cream and Prepared Creams
    - 8.2.1. Cream
    - 8.2.2. Reconstituted cream
    - 8.2.3. Recombined cream
    - 8.2.4. Prepared creams
    - 8.2.5. Prepackaged liquid cream
    - 8.2.6. Whipping cream
    - 8.2.7. Cream packed under pressure
    - 8.2.8. Whipped cream
    - 8.2.9. Fermented cream
    - 8.2.10. Acidified cream
  - 8.3. Cheese
    - 8.3.1. Unripened Cheese
      - 8.3.1.1. Mozzarella
      - 8.3.1.2. Cottage
      - 8.3.1.3. Cream Cheese
    - 8.3.2. Ripened Cheese
      - 8.3.2.1. Cheddar
      - 8.3.2.2. Danbo
      - 8.3.2.3. Edam
      - 8.3.2.4. Gouda

- 8.3.2.5. Havarti
- 8.3.2.6. Samsø
- 8.3.2.7. Emmentaler
- 8.3.2.8. Tilsiter
- 8.3.2.9. Saint Paulin
- 8.3.2.10. Provolone
- 8.3.2.11. Coulmmiers
- 8.3.2.12. Camembert
- 8.3.2.13. Brie
- 8.3.2.14. Extra Hard Grating Cheese
- 8.3.3. Whey Cheese
- 8.4. Milk Fractions and Dairy Products
  - 8.4.1.1. Edible acid casein,
  - 8.4.1.2. Edible rennet casein,
  - 8.4.1.3. Edible caseinate,
  - 8.4.1.4. Whey,
  - 8.4.1.5. Acid whey
- 8.5. Milkfat Products
  - 8.5.1. Butter
  - 8.5.2. Anhydrous Milkfat
  - 8.5.3. Milkfat
  - 8.5.4. Anhydrous butteroil
  - 8.5.5. Butteroil
  - 8.5.6. Ghee
- 8.6. Fermented Milk
- 8.7. Blends of milk and other ingredients
  - 8.7.1. Evaporated Skimmed Milk and Vegetable Fat
  - 8.7.2. Skimmed Milk and Vegetable Fat in Powdered Form
  - 8.7.3. Skimmed Milk and Vegetable Fat
  - 8.7.4. Dairy Fat spread
- 9. Cocoa Products and Chocolate
  - 9.1. Cocoa Butter
  - 9.2. Chocolate and Chocolate Products
    - 9.2.1. Chocolate
    - 9.2.2. Sweet Chocolate
    - 9.2.3. Couverture Chocolate
    - 9.2.4. Milk Chocolate
    - 9.2.5. Family Milk Chocolate
    - 9.2.6. Milk Chocolate Couverture
    - 9.2.7. White Chocolate
    - 9.2.8. Gianduja Chocolate
    - 9.2.9. Gianduja Milk Chocolate
    - 9.2.10. Chocolate para Mesa
    - 9.2.11. Semi-bitter chocolate para Mesa
    - 9.2.12. Bitter chocolate para MESA
    - 9.2.13. Chocolate Vermicelli and Chocolate Flakes
    - 9.2.14. Chocolate Vermicelli and Milk Chocolate Flakes
    - 9.2.15. Filled Chocolate
    - 9.2.16. Praline
  - 9.3. Cocoa Powders

- 9.3.1. Cocoa Powder
- 9.3.2. Fat Reduced Cocoa Powder
- 9.3.3. Highly Fat-Reduced Cocoa Powder
- 9.3.4. Chocolate Powder
- 9.4. Cocoa
  - 9.4.1. Cocoa
  - 9.4.2. Mass
  - 9.4.3. Cocoa cake
- 10. Fish and Fishery Products
  - 10.1. Canned Salmon
  - 10.2. Quick Frozen Finfish, Uneviscerated and Eviscerated
  - 10.3. Canned Shrimps or Prawns
  - 10.4. Canned Tuna and Bonito
  - 10.5. Canned Crab Meat
  - 10.6. Quick Frozen Shrimps or Prawns
  - 10.7. Canned Sardines and Sardine-Type Products
  - 10.8. Quick Frozen Lobsters
    - 10.8.1. Lobster
    - 10.8.2. Rock Lobster, Spiny Lobster or Crawfish
    - 10.8.3. Slipper Lobster, Bay Lobster or Sand Lobster
    - 10.8.4. Norway Lobster
    - 10.8.5. Squat Lobster
  - 10.9. Canned Finfish
  - 10.10. Quick Frozen Blocks of Fish Fillet, Minced Fish Flesh and Mixtures of Fillets and Minced Fish Flesh
  - 10.11. Quick Frozen Fish Sticks (Fish Fingers), Fish Portions and Fish Fillets - Breaded or in Batter
  - 10.12. Salted Fish and Dried Salted Fish of the Gadidae Family of Fishes
  - 10.13. Dried Shark Fins
  - 10.14. Quick Frozen Fish Fillets
  - 10.15. Quick Frozen Raw Squid
  - 10.16. Crackers from Marine and Freshwater Fish, Crustacean and Molluscan Shellfish
  - 10.17. Boiled Dried Salted Anchovies
  - 10.18. Salted Atlantic Herring and Salted Sprat
    - 10.18.1. Very Lightly Salted Fish
    - 10.18.2. Lightly Salted Fish
    - 10.18.3. Medium Salted Fish
  - 10.19. Heavily Salted Fish
  - 10.20. Sturgeon Caviar
  - 10.21. Live and Raw Bivalve Molluscs
  - 10.22. Fish Sauce
  - 10.23. Smoked Fish, Smoke-Flavoured Fish and Smoke-Dried Fish
    - 10.23.1. Smoked Fish
    - 10.23.2. Smoked Flavoured Fish
    - 10.23.3. Smoked-Dried Fish
  - 10.24. Live Abalone and for Raw Fresh Chilled or Frozen Abalone for Direct Consumption or for Further Processing
  - 10.25. Live Abalone
  - 10.26. Raw Fresh Chilled or Frozen Abalone
  - 10.27. Fresh and Quick Frozen Raw Scallop Products
  - 10.28. Scallop Meat

- 10.29. Roe-On Scallop Meat
- 10.30. Quick Frozen Scallop Meat
- 10.31. Quick Frozen Roe-On Scallop Meat
- 11. Natural Mineral Waters
  - 11.1. Naturally carbonated natural mineral water
  - 11.2. Non-carbonated natural mineral water
  - 11.3. Decarbonated natural mineral water
  - 11.4. Natural mineral water fortified with carbon dioxide from the source
  - 11.5. Carbonated natural mineral water
- 12. Salts, spices, soups, sauces, salads and protein products
  - 12.1. Salt and salt substitutes
    - 12.1.1 Salt
    - 12.1.2 Salt substitutes
  - 12.2. Herbs, spices, seasonings, and condiments (e.g. seasoning for instant noodles)
    - 12.2.1 Herbs and spices
    - 12.2.2 Seasonings and condiments
  - 12.3. Vinegars
  - 12.4. Mustards
  - 12.5. Soups and broths
    - 12.5.1. Ready-to-eat soups and broths, including canned, bottled, and frozen
    - 12.5.2. Mixes for soups and broths
  - 12.6. Sauces and like products
    - 12.6.1. Emulsified sauces and dips (e.g. mayonnaise, salad dressing, onion dips)
    - 12.6.2. Non-emulsified sauces (e.g. ketchup, cheese sauce, cream sauce, brown gravy)
    - 12.6.3. Mixes for sauces and gravies
    - 12.6.4. Clear sauces (e.g. fish sauce)
  - 12.7. Salads (e.g. macaroni salad, potato salad) and sandwich spreads excluding cocoa-and nut-based spreads of vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), seaweed, and nut and seed purees and spreads (e.g. peanut butter)) and cocoa-based spreads, incl. fillings
  - 12.8. Yeast and like products
  - 12.9. Soybean-based seasonings and condiments
    - 12.9.1. Fermented soybean paste (e.g. miso)
    - 12.9.2. Soybean sauce
      - 12.9.2.1. Fermented soybean sauce
      - 12.9.2.2. Non-fermented soybean sauce
      - 12.9.2.3. Other soybean sauces
  - 12.10. Protein products other than from soybeans
- 13. Others

**Annex 2: LIST OF PROVISIONS**

This list serves as an inventory of provisions to choose from in order to refer to the provisions in a consistent manner in the other sections of this standard and in the commodities standards.

<b>Provision in CXS 234 and other Codex Standards</b>	<b>Provision suggested</b>
(1→3)(1→4) Beta -D-Glucans	Beta-D-Glucans
Absorbency in ultraviolet	Absorbance
Acesulfame K, Aspartame	Acesulfame K
	Aspartame
Acetic acid (Sections 3.2 Quality criteria and 3.3 Authenticity)	Acetic acid
Acid Insoluble Ash	Ash, acid insoluble
Acid Soluble Ash	Ash, acid soluble
Acid Value	Acid value
Acidity	Acidity
Acidity, free (acid value)	Acidity, free
Acidity, titratable	Acidity, titratable
Acids, free	Acids, free
Acrylonitrile	Acrylonitrile
Aflatoxins, total	Aflatoxins, total (sum of B1, B2, G1 and G2)
Aflatoxin M1	Aflatoxin M1
Alcohol (ethanol) (Sections 3.2 Quality criteria and 3.3 Authenticity)	Ethanol
alpha-Linolenic Acid	Linolenic acid, alpha
Alpha-tocopherol	Tocopherol, alpha
Amino acid nitrogen	Nitrogen, amino acid
Amino nitrogen	Nitrogen, amino
Ammonium < 3 % (m/m)	Ammonium
Anthocyanins (Sections 3.2 Quality criteria and 3.3 Authenticity)	Anthocyanins
Apparent density	Density, apparent
Arsenic	Arsenic
Ascorbic acid-L (additives)	Ascorbic acid, L-Ascorbic acid
Ash	Ash
Ash (including P2O5)	Ash (including P2O5)
Ash (inorganic extraneous matter)	Ash, insoluble
Ash (semolina)	Ash
Ash in fruit products (Sections 3.2 Quality criteria and 3.3 Authenticity)	Ash
Ash insoluble in HCl in cocoa nib, cocoa mass and cocoa press cake	Ash, insoluble
Ash insoluble in HCl	Ash, insoluble
Beet sugar in fruit juices (Sections 3.2 Quality criteria and 3.3 Authenticity)	Stable isotope ratio, oxygen
Benzoic acid	Benzoic acid
Benzoic acid and its salts	Benzoic acid and its salts
Benzoic acid and its salts; sorbic acid and its salts	Benzoic acid and its salts
	Sorbic acid and its salts
Benzoic acid as a marker in orange juice (Sections 3.2 Quality criteria and 3.3 Authenticity)	Benzoic acid

Biotin	Biotin
Broken kernels	Kernels, broken
Butylhydroxyanisole, butylhydroxytoluene, tert-butylhydroquinone, & propyl gallate	Antioxidant, phenolics
C13/C12 ratio of ethanol derived from fruit juices (for the determination of quality and authenticity, according to Stan 247-2005 Sections 3.2 Quality criteria and 3.3 Authenticity)	Stable isotope ratio, carbon
cadmium	Cadmium
Cadmium and Lead	Cadmium
	Lead
Calcium	Calcium
Calcium and magnesium	Magnesium
	Calcium
Capsaicin	Capsaicin
Carbon dioxide (additives and processing aids)	Carbon dioxide
Carbon stable isotope ratio of apple juice (Sections 3.2 Quality criteria and 3.3 Authenticity)	Stable isotope ratio, carbon
Carbon stable isotope ratio of orange juice (Sections 3.2 Quality criteria and 3.3 Authenticity)	Stable isotope ratio, carbon
Carotenoid, total/individual groups (Sections 3.2 Quality criteria and 3.3 Authenticity)	Carotenoids, total and individual fractions
Carotenoids, total	Carotenoids, total
Casein in protein	Casein/protein ratio (expressed as percentage)
Cellobiose	Cellobiose
Centrifugable pulp(Sections 3.2 Quality criteria and 3.3 Authenticity)	Pulp, centrifugable
Chloride	Chloride
Chloride (expressed as sodium chloride)(Sections 3.2 Quality criteria and 3.3 Authenticity)	Chloride expressed as NaCl
Chloride in vegetable juice(Sections 3.2 Quality criteria and 3.3 Authenticity)	Chloride
Choline	Choline
Chromium (Section B of STAN 72 only)	Chromium
Citric acid	Citric acid
Citric acid (additives)	Citric acid
Cocoa Butter	Fat, cocoa butter
Cocoa shell	Shell, cocoa
Colour	Colour
Conductivity ash	Ash, conductivity
Cooking Procedure	Cooking procedure
Copper	Copper
Copper and iron	Copper
	Iron
Copper, manganese, zinc,magnesium, iron	Copper
	Manganese
	Zinc
	Magnesium
	Iron
Cottonseed oil	Oil, cottonseed
Creatinine	Creatinine



Crismer value	Crismer value
Crude fat	Fat
Crude fibre	Fibre, crude
Crude protein	Protein, crude
Crude protein (Nx6.25) $\geq$ 5 m/m%	Protein, crude (total Nx6.25)
Cyclamate	Cyclamate
Determination of granularity	Particle size
Deoxynivalenol	Deoxynivalenol
D-Fructose	Fructose, D-Fructose
D-Glucose	Glucose, D-Glucose
Diastase activity	Diastase
Dietary Fibre, Method applicable for determining dietary fibres that do not include the lower molecular weight fraction.	Fibre, dietary
Dietary fibre, total	Fibre, dietary
Dietary fibre, total/ Method applicable for determining the content of dietary fibres of higher and lower molecular weight. The method is applicable in food that may, or may not, contain resistant starches	Fibre, dietary
Dietary fibres (Method applicable for determining dietary fibres that do not include the lower molecular weight fraction. Provides sugar residue composition of dietary fibre polysaccharides, as well as content of Klason lignin)	Fibre, dietary
Dietary fibres (Method applicable for determining the content of dietary fibres of higher and lower molecular weight, in food where resistant starches are not present)	Fibre, dietary
Dietary fibres (Method applicable for determining the content of dietary fibres of higher and lower molecular weight. The method is applicable in food that may, or may not, contain resistant starches.)	Fibre, dietary
Dietary fibres (not include the lower molecular weight fraction, in foods and food products containing more than 10% dietary fibres and less than 2% starch (e.g. fruits))	Fibre, dietary
Dietary fibres, Method applicable for determining dietary fibres that do not include the lower molecular weight fraction and also includes determination for soluble and insoluble dietary fibres	Fibre, dietary
Difference between the actual and theoretical ECN 42 triglyceride content	Triglyceride
Dissolved iron	Iron, dissolved
Drained weight	Drained weight
Drained weight of shucked molluscs	Drained weight
Drained Weight	Drained weight
Dry extract – soluble solids	Soluble solids
Dry matter	Dry matter
Dry matter (specified in individual standards)	Dry matter
Dry matter (total solids)	Dry matter
Electrical conductivity	Conductivity, electrical
Erythrodiol and uvaol	Erythrodiol and uvaol
Essential oils (in citrus fruit) (volume determination) (Sections 3.2 Quality criteria and 3.3 Authenticity)	Oils, essential
Essential oils (Scott titration) (Sections 3.2 Quality criteria and 3.3 Authenticity)	Oils, essential
Fat	Fat

Fat acidity	Fat acidity
Fat content	Fat
Fat Crude	Fat, crude
Fat in foods not containing starch, meat or vegetable products	Fat
Fat, total	Fat
Fat-free cocoa solids	Fat-free cocoa solids
Fat-free dry matter	Fat-free dry matter
Fat-free Milk Solids	Fat-free dry matter
Fatty acid composition various levels	Fatty acid, composition
Fatty acid composition	Fatty acid, composition
Fatty acids (including trans fatty acid)	Fatty acid, composition
Fatty acids in the 2-position of the triglycerides	Fatty acid, composition in the 2-position of the triglycerides
Fatty acids, free (expressed as oleic acid)	Fatty acid, free
Fermentability	Fermentability
Fibre, crude	Fibre, crude
Fill of containers	Fill of containers
Fish content (declaration)	Fish content
Fish/mince proportions	Proportion of whole and fragmented product
Folate	Folate
Folic acid	Folic acid
Folic Acid (as monoglutamate)	Folic acid
Formol number (Sections 3.2 Quality criteria and 3.3 Authenticity)	Formol number
Free amino acids (Sections 3.2 Quality criteria and 3.3 Authenticity)	Amino acids, free
Free fatty acids	Fatty acids, free fatty acids
Fructans (oligofructoses, inulin, hydrolyzed inulin, polyfructoses) fructooligosaccharides) (applicable to added fructans)	Fructans (oligofructoses, inulin, hydrolyzed inulin, polyfructoses, fructooligosaccharides)
Fructans (oligofructoses, inulin, hydrolyzed inulin, polyfructoses, fructooligosaccharides) (not applicable highly depolymerised fructans)	Fructans (oligofructoses, inulin, hydrolyzed inulin, polyfructoses, fructooligosaccharides)
Fructo-oligosaccharides (monomeric units<5)	Fructo-oligosaccharides (monomeric units<5)
Fructose and Glucose (sum of both)	Fructose and Glucose (sum of both)
Fumaric acid	Fumaric acid
Fumonisin	Fumonisin (sum of B1 and B2)
Gelatinous condition	Gelatinous, condition gelatinous
GLC ranges of fatty acid composition	Fatty acid, composition
Gluconic acid (Sections 3.2 Quality criteria and 3.3 Authenticity)	Gluconic acid
Glucose fructose and saccharose (Sections 3.2 Quality criteria and 3.3 Authenticity)	Glucose
	Fructose
	Saccharose
Glucose-D and fructose-D (permitted ingredients)	Glucose, D-Glucose
	Fructose, D-Fructose
Gluten	Gluten
Glycerol	Glycerol
Granularity	Particle size

Halogenated solvents, traces	Halogenated solvents
Halphen test +/-	Oil, cotton seed
Hesperidin and naringin	Hesperidin
	Naringin
High Fructose Corn Syrup and Hydrolized Inulin Syrup in apple juice - HFCS & HIS in apple juice (permitted ingredients)	Fructose, high fructose
	Inulin
Histamine	Histamine
Hydrogen carbonate (Bicarbonate HCO <sub>3</sub> - )	Bicarbonate
Hydroxymethylfurfural	Hydroxymethylfurfural
Insoluble dietary fibres in food and food products	Fibre, insoluble dietary fibres
Insoluble glucans and mannans of yeast cell wall (for yeast cell wall only)	Glucans and mannans of yeast cell wall (for yeast cell wall only), insoluble
Insoluble impurities	Impurities, insoluble impurities
Insoluble matter	Insoluble matter
Insoluble impurities in light petroleum	Impurities, insoluble impurities in light petroleum
Insoluble impurities	Impurities, Insoluble impurities
Invert sugar	Sugar, Invert sugar
Iodine	Iodine
Iodine (milk based formula)	Iodine
Iodine value	Iodine value or Iodine Index
Iodine value (IV)	Iodine value or Iodine Index
Iodine value 6.3-148 % m/m absorbed iodine	Iodine value
Iodine (for milk-based formula)	Iodine
Iron	Iron
Iron and copper	Iron
	Copper
Irradiated food	Irradiation
Isocitric acid-D	Isocitric acid, D-Isoacitric acid
Lactic Acid	Lactic acid
Lactic acid- D and L	Lactic acid, D and L-Lactic Acid
Lactobacillus acidophilus	Lactobacillus acidophilus
Lactobacillus delbrueckii subsp bulgaricus & Streptococcus thermophilus	Lactobacillus delbrueckii subsp bulgaricus
	Streptococcus thermophilus
Lactose	Lactose
Lead	Lead
Lead (Pb)	Lead
Lead, cadmium, copper, iron and zinc	Lead
	Cadmium
	Cooper
	Iron
	Zinc
Linoleate	Linoleate
Linoleate (in the form of glycerides)	Linoleate
Linolenic Acid	Linolenic acid
Lipid Content	Lipid
L-malic/total malic acid ratio in apple juice	Malic acid, L-malic/total malic acid ratio

Loss on drying	Moisture
Loss on drying (milk based)	Moisture
Magnesium	Magnesium
Malic acid (additives)	Malic acid
Malic acid-D	Malic acid, D-Malic Acid
Malic acid-D in apple juice	Malic acid, D-Malic Acid
Malic acid-L	Malic acid, L-Malic Acid
Manganese	Manganese
Matter volatile at 105°C	Moisture
Melamine	Melamine
Mercury	Mercury
Methyl Mercury	Methyl Mercury
Microorganisms constituting the starter culture	Microorganisms
Milk fat	Fat, milk fat
Milk Fat (min. 3.5% on dry matter)	Fat, milk fat
Milk fat content (butyric acid)	Fat, milk fat
Milk fat in dry matter	Fat, Milk fat in dry matter
Milk fat in dry matter (FDM)	Fat, Milk fat in dry matter
Milk fat in dry matter with high moisture	Fat, Milk fat in dry matter
Milk fat in dry matter with low moisture	Fat, Milk fat in dry matter
Milk fat purity	Fat, milk fat, triglycerides
Milk protein	Milk protein (total N x 6.38)
Milk protein (total N x 6.38 in dry matter)	Milk protein (total N x 6.38)
Milk protein (total N x 6.38)	Milk protein (total N x 6.38)
Milk protein in MSNF	Milk protein in MSNF
Milk solids-not-fat (MSNF)	Milk solids-not-fat (MSNF)
Milkfat	Fat, milk fat
Mineral (ash)	Ash
Mineral impurities	Mineral impurities
Mineral Impurities (Sand)	Mineral impurities (sand)
Mineral oil	Oil, mineral
Minimum Drained Weight	Weight, Drained weight
Moisture	Moisture
Moisture & volatile matter at 105°C	Moisture
Moisture and volatile matter	Moisture
Moisture Content	Moisture
Moisture Content (for expression of values on dry matter)	Moisture
Moisture on fat free basis	Moisture on fat free basis
Moisture, "Free"	Moisture
Moisture/Total Solids	Moisture
	Dry-matter
Molybdenum (Section B of Codex Stan 72 -1981 only)	Molybdenum
Mould count	Mould count
MSNF	Milk solids-not-fat (MSNF)
Naringin and neohesperidin in orange juice (Sections 3.2 Quality criteria and 3.3 Authenticity)	Naringin
	Neohesperidin
Natamycin	Natamycin

Net contents of products covered by glaze	Weight, Net weight
Net weight	Weight, Net weight
Net weight and drained weight drained wt/net wt $\geq$ 60%	Weight, Drained weight
Net weight of products covered by glaze	Weight, Net weight
Net weight of products covered by glaze with water added inside a "block-frozen" product	Weight, Net weight
Niacin	Niacin
Nicotinamide for foods not based on milk	Nicotinamide
Nicotinamide for milk-based foods	Nicotinamide
Nitrates	Nitrates
Nitrates and/or Nitrites	Nitrates
	Nitrites
Nitrite, potassium and/or sodium Salts	Nitrites
Nitrites	Nitrites
Nitrogen	Nitrogen, total
Nitrogen, total	Nitrogen, total
Nitrogen/Protein	Nitrogen/Protein Ratio
Non-cocoa butter vegetable fat	Non-cocoa butter
Non-fat solids	Dry matter, Fat-free
Non-starch polysaccharides	Polysaccharides, non-starch
Ochratoxin A	Ochratoxin A
Oil content	Oil, content
Organoleptic characteristics	Organoleptic characteristics
Packing medium $\geq$ 10°Brix Canned berry fruits (raspberry, strawberry)	Packing medium
P-Anisidine value	Anisidine, P-Anisidine
Pantothenic acid	Pantothenic acid
Pantothenic acid/enriched foods	Pantothenic acid
Pantothenic acid/non-enriched foods	Pantothenic acid
Paralytic shellfish toxicity	Toxicity, paralytic shellfish
Particle Size (granularity)	Particle size
Patulin	Patulin
Pectin (additives)	Pectin
Peroxide value	Peroxide value
Peroxide value (expressed as meq. of oxygen/kg fat)	Peroxide value
Peroxide value(PV)	Peroxide value
pH	pH
pH $\geq$ 4.0; 4.0-4.6 (if acid is added)	pH
pH 4.5-7.0	pH
pH of brine	pH
Phenols	Phenols
Phosphorous	Phosphorous
Phosphorous/phosphate	Phosphorous
	Phosphate
pH-value	pH
Polarization	Polarization

Polydextrose	Polydextrose
Potassium	Potassium
Preservatives in fruit juices (sorbic acid and its salts)	Sorbic acid and its salts
Proline by photometry – non-specific determination	Proline
Proper fill (in lieu of drained weight)	Proper fill
Proportion of fish fillet and minced fish	Proportion of whole and fragmented product
Proportion of fish flesh in fish sticks (fish core)	Proportion of fish flesh in fish sticks (fish core)
Protein	Protein
Protein (N x 5.7)	Protein (Nx5.7)
Protein (Nx6.21)	Protein (Nx6.21)
Protein (Nx6.25)	Protein (Nx6.25)
Protein (Solubilized wheat protein)	Protein
Protein (Vital wheat gluten and devitalized wheat gluten)	Protein
Protein content	Protein
Protein Efficiency Ratio (PER)	Protein Efficiency Ratio (PER)
Quinic, malic and citric acid in cranberry juice cocktail and apple juice	Quinic acid
	Malic acid
	Citric acid
Reducing sugar	Sugar, Reducing sugar
Refractive index	Refractive index
Reichert value and Polenske value	Reichert value
	Polenske value
Relative density (40 0C/water at 20 0C)	Density, relative density
Relative density	Density, relative density
Resistant starch (Recommended for RS3)	Resistant starch
Riboflavin	Riboflavin
Saccharin	Saccharin
Salt	Chloride expressed as NaCl
Salt (NaCl)	Chloride expressed as NaCl
Salt (sodium chloride)	Chloride expressed as NaCl
Salt content	Chloride expressed as NaCl
Salt in brine	Chloride expressed as NaCl
Sample preparation	Sample preparation
Saponification value	Saponification, Saponification value
Saturated fat	Fat, saturated fat
Saxitoxin Group	Saxitoxin
Scorched particles	Particles, Scorched particles
Sediment (scorched particles)	Particles, Scorched particles
Selenium	Selenium
Sesame seed oil	Oil, content
Silica (colloidal, calcium silicate)	Silica
Slip point	Slip point
Soap content	Soap content
Sodium	Sodium
Sodium + Potassium	Sodium
	Potassium
Sodium & Potassium	Sodium
	Potassium

Sodium and Potassium	Sodium
	Potassium
Sodium Chloride	Chloride expressed as NaCl
Sodium chloride $\leq 15\%$ m/m (dry basis)	Chloride expressed as NaCl
Sodium, potassium, calcium, magnesium in fruit juices	Sodium
	Potassium
	Calcium
	Magnesium
Solids	Dry matter
Solids (soluble)	solids, soluble
Solids, alcohol insoluble	solids, alcohol insoluble
Solids, total	Dry matter
Solubility Index	Solubility Index
Soluble dietary fibres in food and food products	Fibre, dietary, soluble
Soluble solids	solids, soluble solids
Soluble solids, total	Solids, soluble solids
Sorbate	Sorbates
Sorbates	Sorbates
Sorbitol	Sorbitol
Sorbitol-D	Sorbitol, D
Stable carbon isotope ratio in the pulp of fruit juices	Stable carbon isotope ratio
Stable carbon isotope ratio of sugars from fruit juices	Stable carbon isotope ratio
Stable hydrogen isotope ratio of water from fruit juices (Sections 3.2 Quality criteria and 3.3 Authenticity)	Stable hydrogen isotope ratio
Stable oxygen isotope ratio in fruit juice water	Stable oxygen isotope ratio
Starch	Starch
Sterol composition and total sterols	Sterols, total and composition
Sterol composition content	Sterols, composition
Sterol content	Sterols
Stigmastadienes	Stigmastadienes
Sucrose (permitted ingredients)	Sucrose
Sucrose content	Sucrose
Sucrose plus invert	Sucrose
Sugar beet derived syrups in frozen concentrated orange juice $\delta^{18}\text{O}$ Measurements in Water	Stable oxygen isotope ratio
Sugars	Sugars
Sugars added: detection of corn and cane sugar products.	Sugar, sugar profile
Sugars added: detection of high fructose syrup, corn syrup.	Sugar, high-fructose
Sugars added: for sugar profile	Sugars, sugar profile
Sulphate	Sulphates
Sulphated ash	Ash, sulphated ash
Sulfates	Sulphates
Sulphide	Sulphites
Sulphites	Sulphites
Sulphur dioxide	Sulphur dioxide
Sulphur dioxide (additives)	Sulphur dioxide
Sum of aflatoxins B1, B2, G1 and G2	Aflatoxins, total (sum of B1, B2, G1 and G2)

Syrup measurements (Refractive index)	Refractive index
Tannins	Tannins
Tartaric acid in grape juice (additives)	Tartaric acid
Thawing procedure	Thawing procedure
Thiamine	Thiamine
Tin	Tin
Tin (Products in other containers)	Tin
Titrate acids, total	Acids, Titrable acids
Titre (0°C)	Titre
Tocopherol content	Tocopherol
Tomato soluble solids	Solids, soluble solids
Total acidity	Acidity, total
Total acidity (as lactic acid)	Acidity, total
Total acidity expressed as percentage of lactic acid	Acidity, total expressed as percentage of lactic acid
Total acidity of the extracted oil	Acidity, total
Total Acidity	Acidity, total
Total Ash	Ash, total
Total Ash,(Max,10\$ m/m op fat free .dry matter or 14% m/m) when treated with alkalizing agents	Ash, total
Total carbohydrates	Carbohydrates, total
Total carbohydrates Moisture/Total Solids Ash	Carbohydrates, total
	Moisture
	Dry matter
	Ash
Total carotenoids 300-2000 mg--carotene/kg	Carotenoids, total
Total dietary fiber	Fibre, dietary fibre
Total dry matter (vacuum-oven drying at 70°C)	Dry matter
Total fat	Fat
Total fat for milk-based infant formula (products not completely soluble in ammonia)	Fat
Total fats	Fat
Total nitrogen	Nitrogen
Total phospholipids	Phospholipids
Total protein content	Protein
Total solids	Dry matter
Total solids (Microwave oven drying)*	Dry matter
Total solids $\geq 70.0\%$ m/m (glucose syrup) $\geq 93.0$ m/m (dried glucose syrup)	Dry matter
Total soluble solids	Solids, soluble solids
Total Solids	Dry matter
Tough Strings	Tough Strings
Traces of halogenated solvents	Solvents, halogenated
Trans fatty acids content	Fatty acids, trans
Trans-galacto-oligo saccharides	Galacto-oligo saccharides, trans
Types of peas, distinguishing	Classification, type of peas
Unsaponifiable matter	Unsaponifiable matter



Unsaponifiable matter 0-30 g/kg	Unsaponifiable matter
Vegetable fat (sterols)	Fat, sterols
Vinyl chloride monomer	Monomer, Vinyl chloride
Vitamin A	Vitamin A
Vitamin A above 500 IU/l milk after reconstitution	Vitamin A
Vitamin A in foods in which carotenes have been added as a source of vitamin A	Vitamin A
Vitamin B12	Vitamin B12
Vitamin B6	Vitamin B6
Vitamin C	Vitamin C
Vitamin C (dehydro-ascorbic acid and ascorbic acid)	Vitamin C
Vitamin D	Vitamin D
Vitamin D (D3, milk based infant formula)	Vitamin D3
Vitamin E	Vitamin E
Vitamin E (milk based infant formula)	Vitamin E
Vitamin K	Vitamin K
Vitamin K1	Vitamin K1
Wash drained weight	Weight, wash drained
Water	Water activity
Water activity	Water activity
Water activity $\leq 0.75$	Water activity
Water capacity	Fill of containers
Water capacity and fill of containers	Fill of containers
Water content	Water
Water phase salt	Salt, salt in water phase
Water-insoluble solids content	Solids, Water-insoluble solids
Wax content	Wax
Zinc	Zinc

**Annex 3: LIST OF THE PRINCIPLES OF THE METHODS**

This list serves as an inventory of principles to choose from in order to refer to the principles in a consistent manner in the other sections of this standard.

<b>Principle in CXS 234</b>	<b>Principle suggested</b>
AAS	Flame atomic absorption spectrometry
AAS (Flame absorption)	Flame atomic absorption spectrometry
AAS after drying ashing	Flame atomic absorption spectrometry
Absorption in ultra violet	Spectrophotometry
Acid hydrolysis and spectrophotometry	Spectrophotometry
Acid hydrolysis, preparation of methyl esters and gas chromatography	Gas chromatography
Acidimetry and nephelometry	Titrimetry Nephelometry
Air drying	Gravimetry
Alkali hydrolysis	Sample Preparation
Analysis of triglycerides of HPLC and calculation	High Performance Liquid Chromatography
Anodic stripping voltametry	Anodic stripping voltametry
Ashing	Gravimetry
Atomic absorption	Graphite furnace atomic absorption spectrometry
Atomic absorption spectrophotometry	Flame Atomic absorption Spectrometry
Atomic absorption spectrophotometry (Atomic absorption Spectrophotometry (direct graphite furnace)	Graphite furnace atomic absorption spectrometry
Atomic absorption spectrophotometry (direct graphite furnace)	Graphite furnace atomic absorption spectrometry
Atomic absorption spectrophotometry (Flame absorption)	Flame atomic absorption spectrometry
Atomic absorption spectroscopy	Flame Atomic absorption spectrometry
Atomic absorption spectrophotometry (direct graphite furnace)	Graphite furnace atomic absorption spectrometry
Bioassay	Bioassay
Calculation	Calculation
Calculation from determination triglycerides by gas chromatography	Gas chromatography
Calculation from dry matter content and content fat Gravimetry, drying at 102 °C Gravimetry (Schmid-Bondzynski-Ratzlaff)	Gravimetry
Calculation from fat content and dry matter content Gravimetry (Röse Gottlieb) Gravimetry, drying at 88 °C	Gravimetry
Calculation from fat content and dry matter content Gravimetry (Schmid-Bondzynski-Ratzlaff) Gravimetry, drying at 102 °C	Gravimetry
Calculation from fat content and moisture content Gravimetry drying at 102°C (forced air oven) Gravimetry (Schmid-Bondzynski-Ratzlaff)	Gravimetry
Calculation from total solids content and fat content Gravimetry (Röse-Gottlieb)	Gravimetry
Calculation from total solids content, fat content and sugar content	Gravimetry

Calculation: Gravimetry (Röse-Gottlieb) Gravimetry	Gravimetry
CAP GC Method	Gas chromatography
Capillary gas chromatography	Gas chromatography
Capillary GLC	Gas chromatography
Carbon isotope ratio mass spectrometry	Mass spectrometry
Centrifugation	Centrifugation
Centrifugation/% value	Centrifugation
Ceramic fiber filtration	Gravimetry
Chemical & HPAEC-PAD	High Performance Liquid Chromatography
cold vapour atomic absorption spectrometry	Cold vapour atomic absorption spectrometry
Colony count at 25 °C, 30 °C, 37 °C a 45 °C according to the starter organism question	Colony count
Colony count at 37 °C	Colony count
Colony-count at 25 °C	Colony count
Colorimetric	Spectrophotometry
Colorimetry	Spectrophotometry
Colorimetry (cadmium reduction)	Spectrophotometry
Colorimetry (dichloroindophenol)	Spectrophotometry
Colorimetry (diethyldithiocarbamate)	Spectrophotometry
Colorimetry (dithizone)	Spectrophotometry
Colorimetry (Molybdenum blue)	Spectrophotometry
Colorimetry (molybdovanadate)	Spectrophotometry
Colorimetry using specific colour grader	Spectrophotometry
Colorimetry, diethyldithiocarbamate	Spectrophotometry
Colorimetry, diethyldithiocarbamates	Spectrophotometry
Colour reaction	Colour reaction
Complexometry Titrimetry	Titrimetry
Conductimetry	Conductimetry
Continuous hydride generation Flame atomic absorption spectrometry (HGAAS)	Hydride generation flame atomic absorption spectrometry
Cooking	Cooking
Densitometry	Densitometry
Determination by difference Gravimetry Gravimetry	Gravimetry
Determining formaldehyde titration method subtracting by ammoniacal nitrogen (magnesium oxide method)	Titrimetry
Deuterium Nuclear Magnetic Resonance (Deuterium NMR)	Nuclear Magnetic Resonance
digestion	Sample Preparation
Digestion/titration	Sample Preparation and Titrimetry
Direct Epifluorescent Filter Technique/Aerobic Plate Count (DEFT/APC)	Direct Epifluorescent Filter Technique and Aerobic Plate Count (DEFT/APC)
Distillation (Scott) , titration	Distillation and Titrimetry
Distillation and direct reading of the volume determination	Distillation and Volumetry
DNA comet assay	Electrophoresis

Drying and weighing	Gravimetry
Electrical conductance	Conductimetry
Electrochemical titrimetry	Titrimetry
electrometry	Potentiometry
Enzymatic gravimetry High Pressure Liquid Chromatography	Gravimetry and High Performance Liquid Chromatography
Enzymatic & colorimetric	Spectrophotometry
Enzymatic & HPAEC-PAD	High Performance Liquid Chromatography
Enzymatic Colorimetric Method with limitations on applicability due to choline and ascorbate concentration.	Spectrophotometry
Enzymatic determination	Spectrophotometry
Enzymatic determination and HPLC	High Performance Liquid Chromatography
Enzymatic digestion/gravimetry	Gravimetry
Enzymatic GC/ colorimetry gravimetry	Gas chromatography and Spectrophotometry and Gravimetry
Enzymatic method	Spectrophotometry
Enzymatic method: Part 1 - Glucose moiety or Part 2 - Galactose moiety	Spectrophotometry
Enzymatic/Gravimetry	Gravimetry
Enzymatic-Gravimetry High Pressure Liquid Chromatography	High Performance Liquid Chromatography
ESR spectroscopy	Electron Spin Resonance spectroscopy
Extraction and separation on alumina	Sample Preparation
Extraction/gravimetry	Gravimetry
Flame atomic absorption	Flame atomic absorption spectrometry
Flame atomic absorption spectrophotometry	Flame atomic absorption spectrometry
Flame atomic absorption spectrometry	Flame atomic absorption spectrometry
Flame atomic absorption spectroscopy	Flame atomic absorption spectrometry
Flameless atomic absorption spectrophotometry	Cold Vapour Atomic absorption spectrometry
Flotation and sedimentation	Sample Preparation
Fluorescence spectrometry	Fluorometry
Fluorometry	Fluorometry
Gas chromatographic analysis of hydrocarbons	Gas chromatography
Gas chromatographic method	Gas chromatography
Gas chromatographic/spectrophotometric analysis of 2/alkylcyclobutanones	Gas chromatography
Gas chromatography	Gas chromatography
Gas chromatography ("head-space")	Gas chromatography
Gas chromatography of methyl esters	Gas chromatography
Gas chromatography with suitable extraction and preparation procedures	Gas chromatography
Gas chromatography	Gas chromatography
Gas-Liquid Chromatography	Gas chromatography
GC	Gas chromatography

GC	Gas chromatography
GFAAS	Graphite furnace atomic absorption spectrometry
GLC	Gas chromatography
Graphite furnace AAS after pressure digestion	Graphite furnace atomic absorption spectrometry
Graphite furnace atomic absorption after dry ashing	Graphite furnace atomic absorption spectrometry
Gravimetric	Gravimetry
Gravimetric determination	Gravimetry
Gravimetry (loss on drying)	Gravimetry
Gravimetry Direct determination of fat using solvent extraction	Gravimetry
Gravimetry (ashing at 825 °C )	Gravimetry
Gravimetry (drying at 102 °C)	Gravimetry
Gravimetry (drying at 120°C for 16 h)	Gravimetry
Gravimetry (drying at 87°C)	Gravimetry
Gravimetry (drying at 88 °C ±2°C)	Gravimetry
Gravimetry (enzymatic digestion)	Gravimetry
Gravimetry (ether extraction)	Gravimetry
Gravimetry (extraction)	Gravimetry
Gravimetry (extraction)	Gravimetry
Gravimetry (ignition at 600°C)	Gravimetry
Gravimetry (open drying)	Gravimetry
Gravimetry (Röse-Gottlieb)	Gravimetry
Gravimetry (Schmid-Bondzynski-Ratzlaff)	Gravimetry
Gravimetry (Schmid-Bondzynski-Ratzlaff) (for samples containing lactose up to 5%) Gravimetry (Weibull-Berntrop) (for samples containing lactose over 5%)	Gravimetry(Schmid-Bondzynski-Ratzlaff) (for samples containing lactose up to 5%) Gravimetry (Weibull-Berntrop) (for samples containing lactose over 5%)
Gravimetry (sieving) note: Use a No. 14 screen instead of '7/16' or No. 8	Gravimetry
Gravimetry (Soxhlet extraction)	Gravimetry
Gravimetry (vacuum oven)	Gravimetry
Gravimetry (vacuum)	Gravimetry
Gravimetry (Weibull-Berntrop)	Gravimetry
Gravimetry after solvent extraction	Gravimetry
Gravimetry drying at 102 °C (forced air oven)	Gravimetry
Gravimetry(ether extraction)	Gravimetry
Gravimetry, after ashing at 550°C	Gravimetry
Gravimetry, Calculation	Gravimetry
Gravimetry, Direct	Gravimetry
Gravimetry, Direct determination of fat using solvent extraction	Gravimetry
Gravimetry, drying at 102 °C	Gravimetry
Gravimetry, drying at 87 °C	Gravimetry
Gravimetry, drying at atmospheric pressure	Gravimetry
High performance liquid chromatography	High Performance Liquid Chromatography

Holaday-Velasco minicolumn	High Performance Liquid Chromatography
Howard mould count	Microscopy
HPAEC-PAD	High Performance Liquid Anion Exchange Chromatography
HPLC	High Performance Liquid Chromatography
HPLC with post column derivatization and immunoaffinity column clean up	High Performance Liquid Chromatography
HPLC with pre-or post column derivatization to thiochrom	High Performance Liquid Chromatography
HPLC with C30 column to separate the cis- and the trans- K vitamins	High Performance Liquid Chromatography
HPLC, incorporating immunoaffinity clean-up and conversion to 5-methyltetrahydrofolate	High Performance Liquid Chromatography
Hydride generation atomic absorption spectrometry (HGAAS)	Hydride generation atomic absorption spectrometry
ICP emission spectroscopy	Inductively Coupled Plasma Optical Emission Spectrometry
ICP-MS	Inductively Coupled Plasma Mass Spectrometry
ICP-MS ; GF-AAS ICP-MS	Inductively Coupled Plasma Mass Spectrometry
	Graphite furnace atomic absorption spectrometry
	Inductively Coupled Plasma Mass Spectrometry
ICP-OES	Inductively Coupled Plasma Optical Emission spectrometry
Immunoaffinity Column (Aflatest) Method Equipment Chromatography/Column Chromatography, Spectroscopy/Fluorometer	High Performance Liquid Chromatography
Immunoassay	Immunoassay
Indirect by refractometry	Refractometry
Indophenol method	Spectrophotometry
Inductively Coupled Plasma optic emission spectrophotometry	Inductively Coupled Plasma Optical Emission spectrometry
Ion chromatography	High Performance Liquid Chromatography
Ion-exchange chromatographic method	High Performance Liquid Chromatography
Ion-selective potentiometry	Potentiometry
Karl Fisher	Titrimetry
Kjeldahl	Titrimetry
Kjeldahl digestion	Sample preparation
Kjeldahl, titrimetry	Titrimetry
LC	Liquid Chromatography
LC-FL	Liquid Chromatography
LC-MS/MS	Liquid Chromatography - Mass Spectrometry
Liquid chromatography	Liquid Chromatography
Liquid chromatography, refractive index detection	Liquid Chromatography
Magnesium oxide	Titrimetry
Microbioassay	Microbioassay
Microbioassay and turbidimetry	Microbioassay
Microbiological method	Biochemical method

Microbiological turbidimetry	Microbioassay
Microfluorometry	Fluorimetry
Molecular absorption spectrophotometry	Spectrophotometry
Mouse bioassay	Bioassay
Open ended capillary tube	Melting point
Optical Biosensor Immunoassay	Potentiometry
Oven evaporation and factor	Gravimetry
Oxygen isotope ratio analysis	Mass spectrometry
Panel test	Sensory analysis
Part 1: Optimized Monier-Williams method	Titrimetry Gravimetry
Part 2: Enzymatic method	Spectrophotometry
Photometric determination	Spectrophotometry
Photometry	Spectrophotometry
Photometry (bathophenanthroline)	Spectrophotometry
Photometry (diethyldithiocarbamate)	Spectrophotometry
Photometry (phenol and H <sub>2</sub> SO <sub>4</sub> )	Spectrophotometry
Photometry, diethyldithiocarbamate	Spectrophotometry
Photostimulated luminescence	Photostimulated luminescence
Physical separation	Gravimetry
Polarimetry	Polarimetry
Potentiometric titration	Potentiometric titration
Potentiometry	Potentiometry
Potentiometry (determination of chloride expressed as sodium chloride)	Potentiometry
Potentiometry, titration to pH 8.30	Potentiometry
Pouring and measuring	Volumetry
Precipitation/photometry	Spectrophotometry
Preparation of fatty acids methyl esters	Sample Preparation
Pycnometry	Pycnometry
Rat bioassay	Bioassay
Receptor binding assay	Radioassay
Refractometry	Refractometry
Romer minicolumn Ultraviolet Light Source	Minicolumn screening / Fluorescence
Sieving	Granulometry
Sieving Gravimetry	Gravimetry
Single sulphonation	Gravimetry
Sohxlet extraction – Gravimetric	Gravimetry
Spectometry	Spectrophotometry

Spectrometric determination of nitrate and nitrite content of meat products after enzymatic reduction of nitrate to nitrite	Spectrophotometry
Spectrometry	Spectrophotometry
Spectrophotometer	Spectrophotometry
Spectrophotometry	Spectrophotometry
Spectrophotometry (1,5 diphenylthiocarbazone)	Spectrophotometry
Spectrophotometry (molybdovanadate)	Spectrophotometry
Spectrophotometry, silver diethyldithiocarbamate	Spectrophotometry
Spiral vessel count, Stone cell count	Microscopy
Stable isotope mass spectrometry	Mass spectrometry
Stretching	Rheology
Test for strain identification	Biochemical test
Thawing	Thawing
Thermoluminescence	Thermoluminescence
Thermometry	Thermometry
Thin layer chromatography	Thin-Layer Chromatography
Thin-Layer Chromatography-Fluorodensit	Thin-Layer Chromatography
Titration	Titrimetry
Titrimetry	Titrimetry
Titrimetry (aqueous extract)	Titrimetry
Titrimetry (back-titration after precipitation)	Titrimetry
Titrimetry (Karl Fischer)	Titrimetry
Titrimetry (Kjeldahl)	Titrimetry
Titrimetry (Lane & Eynon)	Titrimetry
Titrimetry (Mercuric nitrate)	Titrimetry
Titrimetry (Mohr: determination of chloride, expressed as sodium chloride)	Titrimetry
Titrimetry , Kjeldahl digestion	Titrimetry
Titrimetry after distillation	Titrimetry
Titrimetry after extraction with diethyl ether I	Titrimetry
Titrimetry after extraction with diethyl ether	Titrimetry
Titrimetry after extraction with diethyl ether	Titrimetry
Titrimetry using iso-octane	Titrimetry
Titrimetry using sodium thiosulphate	Titrimetry
Titrimetry Chloride expressed as sodium chloride	Titrimetry
Titrimetry, Kjeldahl	Titrimetry
Titrimetry, Kjeldahl digestion	Titrimetry
Titrimetry, Kjeldahl digestion; after extraction of milk protein	Titrimetry
Titrimetry, titration to pH 8.4	Titrimetry
Titrimetry/Distillation	Titrimetry
TLC followed by spectrophotometry or GLC	Thin layer chromatography Spectrophotometry Gas chromatography



Titrimetry	Titrimetry
Turbidimetric Method	Turbidimetry
Turbidity	Turbidimetry
Visual comparison with standard disks, after filtration	Visual inspection
Visual inspection	Visual inspection
Volumetry	Volumetry
Volumetry (modified Van Slyke)	Volumetry
Weighting	Gravimetry
Wijs-Titrimetry	Titrimetry

**Appendix II**

The review and update of methods of analysis and sampling plans in CXS 234 through workable packages are available [here](#) for consideration by the PWG on endorsement of methods.