CODEX ALIMENTARIUS COMMISSION

Food and Agriculture Organization of the United Nations

World Health Organization

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

**38th Session
Budapest, Hungary, 8 – 12 May 2017**

**GENERAL STANDARD ON RECOMMENDED METHODS OF ANALYSIS AND SAMPLING
(CODEX STAN 234-1999)**

INTRODUCTION

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

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

Methods listed in the Section II 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* (CAC/GL 70-2009).

For the actual use of the methods covered by the Standard it is recommended that this Standard should be read in conjunction with the related Codex standards, guidelines and other documents[1].

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

This Standard consists of three main parts and 3 annexes:

   I.   PREAMBLE

   II.   RECOMMENDED METHODS OF ANALYSIS

       **SECTION I - METHODS OF ANALYSIS BY COMMODITY CATEGORIES AND NAMES
       SECTION II- CODEX GENERAL METHODS
       SECTION III - METHODS PERFORMANCE CRITERIA
       SECTION IV- METHODS DESCRIBED**

   III. RECOMMENDED METHODS OF SAMPLING BY COMMODITY CATEGORIES AND NAMES

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

Annex 1: LIST OF COMMODITIES CATEGORIES AND NAMES

Annex 2: LIST OF PROVISIONS

Annex 3: LIST OF THE PRINCIPLES OF THE METHODS

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), these are explained in Codex Procedural Manual – Principles for the Establishment of Codex Methods of Analysis.

2.2 Codex General Method- a method which is applicable uniformly to various groups of commodities and presents performance figures fitted for purposed.

2.3 Method of Analysis Principle: The scientific basis of the method of analysis, described concisely, focusing on the technique

2.4 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 specificed 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 5 sections depending on how the methodologies are proposed, endorsed and approved by CAC:

I. STANDARDIZED METHODS
This section contains:
  a) The name of the commodity;
  b) The provision to which the methods apply;
  c) Codex Standard to which the method is directed;
  d) Identification of the method;
  e) Method of Analysis Principle;
  f) Type of analytical method;
  g) The year of endorsement by CCMAS and the
  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 2 (codex general methods), section 3 (Method performance criteria) or section 4 (Complete description of the method of analysis)

II. CODEX GENERAL METHODS
This section contains:
  a) The provision(s) to which the methods apply,
  b) Identification of the method,
  i) Method of Analysis Principle.
  c) List of commodities that the method presents performance figures fitted for purpose.

III. METHOD PERFORMANCE CRITERIA REQUIRED FOR PROVISION DETERMINATION

This section contains:
   a)   The name of the commodity,
   b)   The provision to which the methods apply,
   c)   Codex Standard to which the method is directed,
   d)   Minimum applicable range,
   e)   limit of detection (LOD),
   f)   limit of quantification (LOQ),
   g)   RSDR (Relative Standard Deviation of Reproducibility),
   h)   % Recovery,
   i)   Year of endorsement by CCMAS and the
   j)   Codex Committee responsible for the Standard and/or provision.
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.

IV. COMPLETE DESCRIPTION OF THE METHOD OF ANALYSIS
This section contains:
   a)   the name of the commodity,
   b)   the provision to which the methods apply,
   c)   Codex Standard to which the method is directed,
   d)   year of endorsement by CAC,
   e)   The Codex Committee responsible for the Standard and/or provision and a description of the method.

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

SECTION I - METHODS OF ANALYSIS BY COMMODITY CATEGORIES AND NAMES

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 complementary.Equivalent methods are listed in different lines.

1. Fruits and Vegetables

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorsement	Committee
Processed fruits and vegetables	Benzoic acid	Codex Stan 13	NMKL 124	Liquid Chromatography	II		CCPFV/CCFA
Processed fruits and vegetables	Benzoic acid	Codex Stan 192 Codex Stan 115 Codex Stan 130 Codex Stan 160 Codex Stan 240 Codex Stan 260 Codex Stan 296	NMKL 103; or AOAC 983.16	Gas Chromatography	III		CCPFV/CCFA
Processed fruits and vegetables	Calcium	STAN 103-1981, STAN 110-1981, STAN 111-1981, STAN 112-1981, STAN 113-1981, STAN 114-1981, STAN	AOAC 968.31	Complexometry/ Titrimetry	II	2003	CCPFV

		115-1981, STAN 13 – 1981/201, STAN 130 - 1981, STAN 131 - 1981, STAN 143 - 1985, STAN 145 - 1985, STAN 160 - 1987, STAN 017 – 1981 - 2001, STAN 177 – 1991 - 2011, STAN 223 - 2001, STAN 240 - 2003, STAN 241 – 2003 - 2015, STAN 242 - 2003, STAN 254 – 2007 - 2013, STAN 260 – 2007 - 2015					
Processed fruits and vegetables	Drained Weight	STAN 103-1981, STAN 110-1981, STAN 111-1981, STAN 112 -1981, STAN 113-1981, STAN 114-1981, STAN 115-1981, STAN 13 – 1981/201, STAN 130 - 1981, STAN 131 -	AOAC 968.30	Sieving Gravimetry	I	2005	CCPFV

		1981, STAN 143 - 1985, STAN 145 - 1985, STAN 160 - 1987, STAN 017 – 1981 - 2001, STAN 177 – 1991 - 2011, STAN 223 - 2001, STAN 240 - 2003, STAN 241 – 2003 - 2015, STAN 242 - 2003, STAN 254 – 2007 - 2013, STAN 260 – 2007 - 2015					
Processed fruits and vegetables	Fill of containers	Codex Stan 115 Codex Stan 13 Codex Stan 145 Codex Stan 17 Codex Stan 223 Codex Stan 241 Codex Stan 242 Codex Stan 254 Codex Stan 260 Codex Stan 296 Codex Stan 297 Codex Stan 319 Codex Stan 38 Codex Stan 42 Codex Stan 57 Codex Stan 60 Codex Stan 62 Codex Stan 66 Codex Stan 78	CAC/RM 46 (reference to "metal containers" deleted and refer to ISO 90-1 for determination of water capacity in metal containers)	Weighing	I	2003	CCPFV

		Codex Stan 99					
Processed fruits and vegetables	Lead	STAN 296 - 2009, STAN 297 – 2009 - 2015, STAN 319 - 2015, STAN 320 - 2015, STAN 38 - 1981, STAN 39 - 1981, STAN 41 - 1981, STAN 42 – 1981 - 1987, STAN 103-1981 STAN 110-1981 STAN 111-1981 STAN 112 - 1981 STAN 113-1981 STAN 114-1981 STAN 115-1981 STAN 13 – 1981/2013 STAN 130 - 1981 STAN 131 - 1981 STAN 143 - 1985 STAN 145 - 1985 STAN 160 - 1987 STAN 017 – 1981 - 2001	AOAC 972.25	AAS (Flame absorption)	III		CCCF

		STAN 177 – 1991 - 2011 STAN 223 - 2001 STAN 240 - 2003 STAN 241 – 2003 - 2015 STAN 242 - 2003 STAN 254 – 2007 - 2013 STAN 260 – 2007 - 2015 STAN 296 - 2009 STAN 297 – 2009 - 2015 STAN 319 - 2015 STAN 320 - 2015 STAN 38 - 1981 STAN 39 - 1981 STAN 41 - 1981 STAN 42 – 1981 - 1987 STAN 52 - 1981 STAN 57 – 1981 - 2013 STAN 60 - 1981 STAN 62 - 1981 STAN 66 – 1981-2013 STAN 67-1981 STAN 69 - 1981				

		STAN 75 - 1981 STAN 76 - 1981 STAN 77 - 1981 STAN 78 – 1981 STAN 99 - 1981 Codex Stan 193					
Processed fruits and vegetables	Packing medium Canned berry fruits (raspberry, strawberry)	Codex Stan 55 Codex Stan 60 Codex Stan 62 Codex Stan 69	AOAC 932.12 ISO 2173	Refractometry	I	2013	CCPFV
Processed fruits and Vegetables (except canned bamboo shoots, pH determined by AOAC 981.12)	pH	Codex Stan 13	ISO 1842	Potentiometry	IV	1981	CCPFV
Processed fruits and vegetables	pH	Codex Stan 260	AOAC 981.12	Potentiometry	III	2007	CCPFV
Processed fruits and vegetables	pH	Codex Stan 260	NMKL 179	Potentiometry	II	2007	CCPFV
Processed fruits and vegetables	Soluble solids	Codex Stan 103 Codex Stan 115 Codex Stan 13 Codex Stan 145 Codex Stan 160 Codex Stan 17 Codex Stan 296 Codex Stan 319 Codex Stan 52 Codex Stan 57	ISO 2173 AOAC 932.12	Refractometry	I		CCPFV

		Codex Stan 69 Codex Stan 75						
Processed fruits and vegetables	Sorbates	Codex Stan 260 Codex Stan 192	NMKL 103 / AOAC 983.16	Gas Chromatography	III	2007	CCPFV/CCFA
Processed fruits and vegetables	Sorbates	Codex Stan 260	NMKL 124	Liquid Chromatography	II	2007	CCPFV/CCFA
Processed fruits and vegetables	Tin	Codex Stan 13 Codex Stan 193	AOAC 980.19	AAS	II		CCPFV/CCCF
Processed fruits and vegetables	Total solids	STAN 103-1981, STAN 110-1981, STAN 111-1981, STAN 112-1981, STAN 113-1981, STAN 114-1981, STAN 115-1981, STAN 13 – 1981/201, STAN 130 - 1981, STAN 131 - 1981, STAN 143 - 1985, STAN 145 - 1985, STAN 160 - 1987, STAN 017 – 1981 - 2001, STAN 177 – 1991 - 2011, STAN 223 - 2001, STAN 240 - 2003, STAN 241 – 2003 - 2015, STAN 242	AOAC 920.151	Gravimetry	I	2003	CCPFV

		- 2003, STAN 254 – 2007 - 2013, STAN 260 – 2007 - 2015					
Aqueous Coconut Products	Total Fats	Codex Stan 240	ISO 1211 | IDF 1	Gravimetry (Röse-Gottlieb)	I	2013	CCPFV
Aqueous Coconut Products	Total solids	Codex Stan 240	ISO 6731 | IDF 21	Gravimetry	I	2013	CCPFV
Aqueous Coconut Products	Non-fat solids	Codex Stan 240	ISO 1211 | IDF 1ISO 6731 | IDF 21	Calculation: Gravimetry (Röse-Gottlieb) Gravimetry	I	2013	CCPFV
Aqueous Coconut Products	Moisture	Codex Stan 240	ISO 6731 | IDF 21	Calculation: Gravimetry	I	2013	CCPFV
Canned Apple Sauce	Fill of containers	Codex Stan 17	CAC/RM 46* (for glass containers) (Codex general method for processed fruits and vegetables) and ISO 90-1 (for metal containers)	Weighing	I	2013	CCPFV
Canned Apple Sauce	Soluble solids	Codex Stan 17	AOAC 932.12 ISO 2173	Refractometry	I	2013	CCPFV
Canned green beans and wax beans	Tough strings	CODEX STAN 297	CAC/RM 39	Stretching	I	2009	CCPFV
Canned green peas	Proper fill (in lieu of drained weight)	Codex Stan 297	CAC/RM 45	Pouring and measuring	I	2009	CCPFV
Canned green peas	Types of peas, distinguishing	Codex Stan 297	CAC/RM 48	Visual inspection	I	2009	CCPFV
Canned mangoes	Syrup	Codex Stan 184	AOAC 932.14C	Brix spindle method	I	1993	CCPFV
Canned mushrooms	Washed drained weight	Codex Stan 038	CAC/RM 44	Sieving	I	1981	CCPFV

Canned palmito	Mineral impurities		ISO 762	Gravimetry	I		
Canned Stone Fruits	Drained weight		AOAC 968.30 ISO:2173	Gravimetry	I		
Canned Stone Fruits	Soluble solids		AOAC 932.14C	Refractometry	I		
Canned strawberries	Calcium		AOAC 968.31	Complexometric titrimetry	II		
Canned strawberries	Mineral impurities		AOAC 971.33	Gravimetry	I		
Certain canned citrus fruits	Calcium		NMKL 153	Atomic Absorption Spectrophotometry	II		
Certain canned citrus fruits	Calcium		AOAC 968.31	Complexometry Titrimetry	III		
Certain Canned Vegetables (palmito)	Mineral impurities (sand)		AOAC 971.33 ISO 762	Gravimetry	I		
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		
Desiccated coconut	Total acidity of the extracted oil		ISO 660 or AOCS Cd 3d-63	Titrimetry	I		
Desiccated coconut	Ash		AOAC 950.49	Gravimetry	I		
Desiccated coconut	Extraneous vegetable matter		Described in the Standard	Counting extraneous material with the naked eye	IV		

Desiccated coconut	Moisture		AOAC 925.40	Gravimery (loss on drying)	I		
Desiccated coconut	Oil content		AOAC 948.22	Gravimetry	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		
Jams (fruit preserves) and jellies	Fill of Containers		CAC/RM 46	Weighing	I		
Jams (fruit preserves) and jellies	Soluble solids		ISO 2173 AOAC 932.12	Refractometry	I		
Mango chutney	Ash insoluble in HCl		ISO 763	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	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		NMKL 153	Atomic Absorption Spectrophotometry	II		

Preserved tomatoes	Minimum Drained Weight		AOAC 968.30	Gravimetry (sieving) note: Use a No. 14 screen instead of '7/16' or No. 8	I		
Preserved tomatoes	Mould count		AOAC 965.41	Howard mould count	I		
Processed tomato concentrates	Lactic acid		EN 2631	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	Potentiometry	II		
Processed tomato concentrates	Tomato soluble solids		AOAC 970.59	Refractometry	I		
Raisins	Mineral impurities		CAC/RM 51	Ashing	I		
Raisins	Mineral oil		CAC/RM 52	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	Drained weight		AOAC 968.30	Sieving Gravimetry	I		

Table olives	Fill of containers		CAC/RM 46* (for glass containers) (Codex general method for processed fruits and vegetables) and ISO 90-1 (for metal containers)	Weighing	I		
Table olives	pH of brine		NMKL 179	Potentiometry	II		
Table olives	pH of brine		AOAC 981.12	Potentiometry	III		
Table olives	pH of brine		ISO 1842	Potentiometry	IV		
Table olives	Salt in brine		AOAC 971.27 | NMKL 178	Potentiometry	II		
Table olives	Lead		AOAC 999.11 | NMKL 139	AAS (Flame absorption)	II		
Table olives	Tin		NMKL 190 | EN 15764	AAS	II		
Quick frozen fruits and vegetables	Net weight		CAC/RM 34	Weighing	I		
Quick frozen fruits and vegetables	Thawing procedure		CAC/RM 32	Thawing	I		
Quick frozen fruits and vegetables: Berries, leek and carrot	Mineral impurities		CAC/RM 54	Flotation and sedimentation	I		
Quick frozen fruits and vegetables: Berries, Whole kernel corn and Corn-on-the-cob	Soluble solids, total		CAC/RM 43	Refractometry	I		
Quick frozen fruits and vegetables:	Drained fruit/drained berries		Described in the Standards	Draining	I		

Peaches and berries							
Quick frozen fruits and vegetables: Vegetables	Cooking procedure		CAC/RM 33	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	Stretching	I		
Quick frozen peas	Solids, alcohol insoluble		CAC/RM 35	Gravimetry	I		
Quick frozen spinach	Dry matter, Salt-free		Described in the Standard	Weighing	I		
Fruit Juices and Nectars	Ascorbic acid-L (additives)		IFUMA 17A	HPLC	II		
Fruit Juices and Nectars	Ascorbic acid-L (additives)		ISO 6557-1	Fluorescence spectrometry	IV		
Fruit Juices and Nectars	Ascorbic acid-L (additives)		AOAC 967.21 IFUMA 17 ISO 6557-2	Indophenol method	III		
Fruit Juices and Nectars	Carbon dioxide (additives and processing aids)		IFUMA 42	Titrimetry (back-titration after precipitation)	IV		
Fruit Juices and Nectars	Cellobiose		IFUMA 4	Capillary gas chromatography	IV		

Fruit Juices and Nectars	Citric acid [2](additives)		AOAC 986.13	HPLC	II		
Fruit Juices and Nectars	Citric acid [5] (additives)		EN 1137 IFUMA 22	Enzymatic determination	III		
Fruit Juices and Nectars	Glucose and fructose (permitted ingredients)		EN 12630 IFUMA 67 NMKL 148	HPLC	III		
Fruit Juices and Nectars	Glucose-D and fructose-D (permitted ingredients)		EN 1140 IFUMA 55	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 IFUMA 64	Enzymatic determination	II		
Fruit Juices and Nectars	Malic acid-D in apple juice		AOAC 995.06	HPLC	II		
Fruit Juices and Nectars	Malic acid-L		EN 1138 IFUMA 21	Enzymatic determination	II		
Fruit Juices and Nectars	Pectin (additives)		IFUMA 26	Precipitation/photometry	I		

[2] All juices except citrus based juices

Fruit Juices and Nectars	Benzoic acid and its salts; sorbic acid and its salts		IFUMA 63 NMKL 124	HPLC	II		
Fruit Juices and Nectars	Benzoic acid and its salts		ISO 5518, ISO 6560	Spectrometry	III		
Fruit Juices and Nectars	Preservatives in fruit juices (sorbic acid and its salts)		ISO 5519	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	Liquid chromatography	II		
Fruit Juices and Nectars	Soluble solids		AOAC 983.17 EN 12143 IFUMA 8 ISO 2173	Indirect by refractometry	I		
Fruit Juices and Nectars	Sucrose (permitted ingredients)		EN 12146 IFUMA 56	Enzymatic determination	III		
Fruit Juices and Nectars	Sucrose (permitted		EN 12630 IFUMA 67 NMKL 148	HPLC	II		

	ingredients)						
Fruit Juices and Nectars	Sulphur dioxide (additives)		Optimized Monier Williams AOAC 990.28 IFUMA 7A NMKL 132	Titrimetry after distillation	II		
Fruit Juices and Nectars	Sulphur dioxide (additives)		NMKL 135	Enzymatic determination	III		
Fruit Juices and Nectars	Sulphur dioxide (additives)		ISO 5522, ISO 5523	Titrimetry after distillation	III		
Fruit Juices and Nectars	Tartaric acid in grape juice (additives)		EN 12137 IFUMA 65	HPLC	II		
Fruit Juices and Nectars	Total nitrogen		EN 12135 IFUMA 28	Digestion/titration	I		
Fruit Juices and Nectars	Acetic acid (Sections 3.2 Quality Criteria and 3.3 Authenticity)[3]		EN 12632; IFUMA 66	Enzymatic determination	II		
Fruit Juices and Nectars	Alcohol (ethanol) (Sections 3.2 Quality Criteria		IFUMA 52	Enzymatic determination	II		

[3] 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.

	and 3.3 Authenticity)						
Fruit Juices and Nectars	Anthocyanins (Sections 3.2 Quality Criteria and 3.3 Authenticity)		IFUMA 71	HPLC	I		
Fruit Juices and Nectars	Ash in fruit products (Sections 3.2 Quality Criteria and 3.3 Authenticity)		AOAC 940.26; EN 1135; IFUMA 9	Gravimetry	I		
Fruit Juices and Nectars	Beet sugar in fruit juices(Sections 3.2 Quality Criteria and 3.3 Authenticity)		AOAC 995.17	Deuterium NMR	II		
Fruit Juices and Nectars	Benzoic acid as a marker in orange juice (Sections 3.2 Quality Criteria and 3.3		AOAC 994.11	HPLC	III		

	Authenticity)						
Fruit Juices and Nectars	C13/C12 ratio of ethanol derived from fruit juices (Sections 3.2 Quality Criteria and 3.3 Authenticity)		JAOAC 79, No. 1, 1996, 62-72	Stable isotope mass spectrometry	II		
Fruit Juices and Nectars	Carbon stable isotope ratio of apple juice (Sections 3.2 Quality Criteria and 3.3 Authenticity)		AOAC 981.09 - JAOAC 64, 85 (1981)	Stable isotope mass spectrometry	II		
Fruit Juices and Nectars	Carbon stable isotope ratio of orange juice (Sections 3.2 Quality Criteria and 3.3 Authenticity)		AOAC 982.21	Stable isotope mass spectrometry	II		

Fruit Juices and Nectars	Carotenoid, total/individual groups (Sections 3.2 Quality Criteria and 3.3 Authenticity)		EN 12136; IFUMA 59	Spectrophotometry	I		
Fruit Juices and Nectars	Centrifugable pulp (Sections 3.2 Quality Criteria and 3.3 Authenticity)		EN 12134; IFUMA 60	Centrifugation/% value	III		
Fruit Juices and Nectars	Chloride (expressed as sodium chloride) (Sections 3.2 Quality Criteria and 3.3 Authenticity)		EN 12133 IFUMA 37	Electrochemical titrimetry	II		
Fruit Juices and Nectars	Chloride in vegetable juice (Sections 3.2 Quality Criteria and 3.3		AOAC 971.27 ISO 3634	Titration	I		

	Authenticity)						
Fruit Juices and Nectars	Essential oils (Scott titration) (Sections 3.2 Quality Criteria and 3.3 Authenticity)		AOAC 968.20 - IFUMA 45*	(Scott) distillation, titration	I		
Fruit Juices and Nectars	Essential oils (in citrus fruit) (volume determination)* (Sections 3.2 Quality Criteria and 3.3 Authenticity)		ISO 1955	Distillation and direct reading of the volume determination	I		
Fruit Juices and Nectars	Fermentability (Sections 3.2 Quality Criteria and 3.3 Authenticity)		IFUMA 18	Microbiological method	I		
Fruit Juices and Nectars	Formol number (Sections 3.2 Quality Criteria and 3.3		EN 1133 IFUMA 30	Potentiometric titration	I		

	Authenticity)						
Fruit Juices and Nectars	Free amino acids (Sections 3.2 Quality Criteria and 3.3 Authenticity)		EN 12742 IFUMA 57	Liquid Chromatography	II		
Fruit Juices and Nectars	Fumaric acid (Sections 3.2 Quality Criteria and 3.3 Authenticity)		IFUMA 72	HPLC	II		
Fruit Juices and Nectars	Glucose fructose and saccharose (Sections 3.2 Quality Criteria and 3.3 Authenticity)		EN 12630 IFUMA 67 NMKL 148	HPLC	II		
Fruit Juices and Nectars	Gluconic acid (Sections 3.2 Quality Criteria and 3.3 Authenticity)		IFUMA 76	Enzymatic determination	II		

Fruit Juices and Nectars	Glycerol (Sections 3.2 Quality Criteria and 3.3 Authenticity)		IFUMA 77	Enzymatic determination	II		
Fruit Juices and Nectars	Hesperidin and naringin (Sections 3.2 Quality Criteria and 3.3 Authenticity)		EN 12148 IFUMA 58	HPLC	II		
Fruit Juices and Nectars	Hydroxymethylfurfural (Sections 3.2 Quality Criteria and 3.3 Authenticity)		IFUMA 69	HPLC	II		
Fruit Juices and Nectars	Hydroxymethylfurfural (Sections 3.2 Quality Criteria and 3.3 Authenticity)		ISO 7466	Spectrometry	III		
Fruit Juices and Nectars	Isocitric acid-D (Sections 3.2 Quality		IFUMA 54	Enzymatic determination	II		

	Criteria and 3.3 Authenticity)						
Fruit Juices and Nectars	Lactic acid- D and L (Sections 3.2 Quality Criteria and 3.3 Authenticity)		EN 12631 IFUMA 53	Enzymatic determination	II		
Fruit Juices and Nectars	L-malic/total malic acid ratio in apple juice (Sections 3.2 Quality Criteria and 3.3 Authenticity)		AOAC 993.05	Enzymatic determination and HPLC	II		
Fruit Juices and Nectars	Naringin and neohesperidin in orange juice (Sections 3.2 Quality Criteria and 3.3 Authenticity)		AOAC 999.05	HPLC	III		
Fruit Juices and Nectars	pH-value (Sections		NMKL 179 EN 1132 IFUMA 11 ISO 1842	Potentiometry	II IV		

	3.2 Quality Criteria and 3.3 Authenticity)						
Fruit Juices and Nectars	Phosphorus/phosphate (Sections 3.2 Quality Criteria and 3.3 Authenticity)		EN 1136 IFUMA No 50	Photometric determination	II		
Fruit Juices and Nectars	Proline by photometry .. non-specific determination (Sections 3.2 Quality Criteria and 3.3 Authenticity)		EN 1141 IFUMA 49	Photometry	I		
Fruit Juices and Nectars	Relative density (Sections 3.2 Quality Criteria and 3.3 Authenticity)		EN 1131 (1993); IFUMA 01 & IFU Method No General sheet (1971)	Pycnometry	II		
Fruit Juices and Nectars	Relative density (Sections 3.2 Quality		IFUMA 01A	Densitometry	III		

	Criteria and 3.3 Authenticity)						
Fruit Juices and Nectars	Sodium, potassium, calcium, magnesium in fruit juices (Sections 3.2 Quality Criteria and 3.3 Authenticity)		EN 1134 IFUMA 33	Atomic Absorption Spectroscopy	II		
Fruit Juices and Nectars	Sorbitol-D (Sections 3.2 Quality Criteria and 3.3 Authenticity)		IFUMA62	Enzymatic determination	II		
Fruit Juices and Nectars	Stable carbon isotope ratio in the pulp of fruit juices (Sections 3.2 Quality Criteria and 3.3 Authenticity)		ENV 13070 Analytica Chimica Acta 340 (1997)	Stable isotope mass spectrometry	II		
Fruit Juices and Nectars	Stable carbon isotope		ENV 12140 Analytica Chimica Acta.271 (1993)	Stable isotope mass spectrometry	II		

	ratio of sugars from fruit juices (Sections 3.2 Quality Criteria and 3.3 Authenticity)						
Fruit Juices and Nectars	Stable hydrogen isotope ratio of water from fruit juices (Sections 3.2 Quality Criteria and 3.3 Authenticity)		ENV 12142	Stable isotope mass spectrometry	II		
Fruit Juices and Nectars	Stable oxygen isotope ratio in fruit juice water (Sections 3.2 Quality Criteria and 3.3 Authenticity)		ENV 12141	Stable isotope mass spectrometry	II		
Fruit Juices and Nectars	Starch (Sections 3.2 Quality Criteria		AOAC 925.38 IFUMA 73	Colorimetric	I		

	and 3.3 Authenticity)						
Fruit Juices and Nectars	Sugar beet derived syrups in frozen concentrated oragne juice δ^{18}O Measurements in Water (Sections 3.2 Quality Criteria and 3.3 Authenticity)		AOAC 992.09	Oxygen isotope ratio analysis	I		
Fruit Juices and Nectars	Titrable acids, total (Sections 3.2 Quality Criteria and 3.3 Authenticity)		EN 12147 IFUMA 03 ISO 750	Titrimetry	I		
Fruit Juices and Nectars	Total dry matter (vacuum-oven drying at 70°C)* (Sections 3.2 Quality Criteria and 3.3		EN 12145 IFUMA 61	Gravimetric determination	I		

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorsement	Committee
	Authenticity)						
Fruit Juices and Nectars	Total solids (Microwave oven drying)* (Sections 3.2 Quality Criteria and 3.3 Authenticity)		AOAC 985.26	Gravimetric determination	I		
Fruit Juices and Nectars	Vitamin C (dehydro-ascorbic acid and ascorbic acid) (Sections 3.2 Quality Criteria and 3.3 Authenticity)		AOAC 967.22	Microfluorometry	III		

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

2.   Processed Meat and Poultry products

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorsement	Committee
Meat Products	Nitrates and/or Nitrites		EN 12014-3	Spectrometric determination of nitrate and nitrite content of meat products after	III		

				enzymatic reduction of nitrate to nitrite			
Meat Products	Nitrates and/or Nitrites		EN 12014-4 NMKL 165	Ion-exchange chromatographic method	III		
Processed meat and poultry products	Fat		ISO 1443	Gravimetry	I		
Processed meat and poultry products	Lead		AOAC 934.07	Colorimetry (dithizone)	II		
Processed meat and poultry products	Nitrates		ISO 3091	Colorimetry (cadmium reduction)	II		
Processed meat and poultry products	Nitrites		ISO 2918	Colorimetry	IV		
Processed meat and poultry products	Tin		AOAC 985.16	Atomic absorption spectrophotometry	II		
Processed meat and poultry products	Nitrogen/ protein		ISO 937	Titrimetry	II		
Canned corned beef	Lead		AOAC 972.25	Atomic absorption spectrophotometry	II		
Canned corned beef	Nitrites, potassium and/or sodium salt		AOAC 973.31	Colorimetry	II		
Canned corned beef	Nitrites, potassium and/or sodium salt		ISO 2918	Colorimetry	IV		

Canned corned beef	Tin (Products in tinplate and other containers)		AOAC 985.16	Atomic absorption spectrophotometry	II		
Cooked cured chopped meat	Fat		ISO 1443	Gravimetry (extraction)	I		
Cooked cured chopped meat	Lead		AOAC 972.25	Atomic absorption spectrophotometry	II		
Cooked cured chopped meat	Nitrites		AOAC 973.31	Colorimetry	II		
Cooked cured chopped meat	Nitrites		ISO 2918	Colorimetry	IV		
Cooked cured chopped meat	Tin		AOAC 985.16	Atomic absorption spectrophotometry	II		
Cooked cured ham	Fat		ISO 1443	Gravimetry (extraction)	I		
Cooked cured ham	Gelatin, added		Described in the Standard	Calculation	I		
Cooked cured ham	Lead		AOAC 972.25	Atomic absorption spectrophotometry	II		
Cooked cured ham	Nitrites		AOAC 973.31	Colorimetry	II		
Cooked cured ham	Nitrites		ISO 2918	Colorimetry	IV		
Cooked cured ham	Protein (conversion factor 6.25)		ISO 937	Titrimetry, Kjeldahl digestion	II		
Cooked cured ham	Tin		AOAC 985.16	Atomic absorption spectrophotometry	II		
Cooked cured pork shoulder	Fat		ISO 1443	Gravimetry (extraction)	I		
Cooked cured pork shoulder	Gelatin, added		Described in the Standard	Calculation	I		

Cooked cured pork shoulder	Lead		AOAC 972.25	Atomic absorption spectrophotometry	II		
Cooked cured pork shoulder	Nitrites		AOAC 973.31	Colorimetry	II		
Cooked cured pork shoulder	Nitrites		ISO 2918	Colorimetry	IV		
Cooked cured pork shoulder	Protein		ISO 937	Titrimetry, Kjeldahl digestion	II		
Cooked cured pork shoulder	Tin		AOAC 985.16	Atomic absorption spectrophotometry	II		
Luncheon meat	Fat		ISO 1443	Gravimetry (extraction)	I		
Luncheon meat	Lead		AOAC 972.25	Atomic absorption spectrophotometry	II		
Luncheon meat	Nitrites, potassium and/or sodium salt		AOAC 973.31	Colorimetry	II		
Luncheon meat	Nitrites, potassium and/or sodium salt		ISO 2918	Colorimetry	IV		
Luncheon meat	Tin		AOAC 985.16	Atomic absorption spectrophotometry	II		

3.   Foodstuffs intended for particular nutritional uses

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorse ment	Committee
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	Potentiometry	II		
Special foods	Dietary fibre, total		AOAC 985.29	Gravimetry (enzymatic digestion)	I		
Special foods	Fat		CAC/RM 55	Gravimetry (extraction)	I		
Special foods	Fat in foods not containing starch, meat or vegetable products		CAC/RM 1, B-2	Gravimetry	I		
Special foods	Fill of containers		CAC/RM 46	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 (milk based)		AOAC 925.23 ISO 6731|IDF 21	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		*The Analyst* 89 (1964):1, 3-6, ibid. 232 US Dept Agr., *Agr. Handbook* 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		
Special foods	Riboflavin		AOAC 970.65	Fluorometry	II		
Special foods	Sodium and Potassium		ISO 8070|IDF 119	Flame atomic absorption spectrometry	II		
Special foods	Sodium and potassium		AOAC 984.27	ICP emission spectrometry	III		
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 B12		AOAC 952.20	Microbioassay	II		
Special foods	Vitamin B6		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 D (D3, milk based infant formula)		AOAC 992.26	Liquid chromatography	II		
Special foods	Vitamin E		AOAC 971.30	Colorimetry	IV		
Special foods	Vitamin E (milk based infant formula)		AOAC 992.03	Liquid chromatography	II		
Special foods	Sodium and Potassium		ISO 8070|IDF 119	Flame atomic absorption spectrometry	II		
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 Measures total pantothenate (free pantothenic acid + CoA- + ACP-bound) and measured as D-pantothenic acid (or calcium D-pantothenate)	Microbioassay	II		
Follow-up formula	Vitamin A		AOAC 974.29	Colorimetry	IV		
Follow-up formula	Vitamin A (retinol isomers)		AOAC 992.04	HPLC	II		
Follow-up formula	Vitamin A (retinol) (above 500 IU/l milk after reconstitution)		AOAC 992.06	HPLC	III		
Follow-up formula	Vitamin K		AOAC 999.15 EN 14148 (vitamin K1) (Measures either aggregated cis + trans K1 or can measure individual cis and trans forms depending on LC column.)	HPLC with C30 column to separate the cis- and the trans- K vitamins	II		
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		
Gluten-free foods	Gluten		Enzyme-Linked Immunoassay R5 Mendez (ELISA) Method	Immunoassay	I		

			Eur J Gastroenterol Hepatol 2003; 15: 465-474				
Infant formula	Biotin		EN 15607 (d-biotin) (Measures total D-biotin (free + D-biocytin)	HPLC	II		
Infant formula	Calories (by calculation)		Method described in CAC/Vol IX-Ed.1, Part III[4]	Calculation	I		
Infant formula	Calcium		ISO 8070 | IDF 119	Flame atomic absorption spectrophotometry	II		
Infant formula	Calcium		AOAC 985.35	Flame atomic absorption spectroscopy	III		
Infant formula	Calcium		AOAC 984.27	ICP emission spectroscopy	III		
Infant formula	Chloride		AOAC 986.26	Potentiometry	III		
Infant formula	Choline		AOAC 999.14	Enzymatic Colorimetric Method with limitations on applicability due to choline and ascorbate concentration.	II		

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[4] Section 9. Calories by calculation – Section 9.2 Conversion Factors

(a) protein   4 kcal per g

(b) carbohydrate   4 kcal per g

(c) fat   9 kcal per g

(d) monosaccharides   3.75 kcal per g

(e) specific food ingredients See "Energy and Protein Requirements"(FAO Nutrition Meeting Report Series No. 52 or WHO Technical Report Series No. 522)

(f) other specific calorie conversion factors maybe used where the formulation of the food and the nutrient content are known and where such specific conversion factors are physiologically more meaningful than the factors listed above

Infant formula	Copper		AOAC 985.35	Flame atomic absorption spectroscopy	II		
Infant formula	Copper		AOAC 984.27	ICP emission spectroscopy	III		
Infant formula	Chromium (Section B of CODEX STAN 72-1981 only)		EN 14082	Graphite furnace atomic absorption after dry ashing	II		
Infant formula	Chromium (Section B of CODEX STAN 72-1981 only)		EN 14083	Graphite furnace AAS after pressure digestion	III		
Infant formula	Chromium (Section B of CODEX STAN 72-1981 only)		AOAC 2006.03	ICP emission spectroscopy	III		
Infant formula	Chromium (Section B of CODEX STAN 72-		AOAC 2011.19 | ISO 20649 |IDF 235	ICP-MS	III		

	1981 only)						
Infant formula	Crude protein[5]		ISO 8968-1 | IDF 20-1	Titrimetry (Kjeldahl)	I		
Infant formula	Fatty acids (including trans fatty acid)		AOAC 996.06	Gas chromatography	III		
Infant formula	Fatty acids (including trans fatty acid)		AOCS Ce 1i-07	Gas chromatography	III		
Infant formula	Folic acid		AOAC 992.05 (Measures free folic acid + free, unbound natural folates, aggregated and measured as folic acid) EN 14131 (Total folate (free + bound), aggregated and measured as folic acid)	Microbioassay	II		
Infant formula	Folic acid		J AOAC Int. 2000:83; 1141-1148 (Measures free folic acid + proportion of free, natural folate)	Optical Biosensor Immunoassay	IV		
Infant formula	Folic acid		J Chromatogr. A., 928, 77-90, 2001 (Measures total folates after conversion to, and measurement as 5-Me-H4PteGlu)	HPLC, incorporating immunoaffinity clean-up and conversion to 5-methyltetrahydrofolate	IV		
Infant formula	Iodine		AOAC 2012.15 | ISO 20647 | IDF 234	ICP-MS	II		

[5] Determination of Crude Protein

The calculation of the protein content of infant formulas prepared ready for consumption may be based on N x 6.25, unless a scientific justification is provided for the use of a different conversion factor for a particular product. The value of 6.38 is generally established as a specific factor appropriate for conversion of nitrogen to protein in other milk products, and the value of 5.71 as a specific factor for conversion of nitrogen to protein in other soy products

	(for milk-based formula)						
Infant formula	Iron[6]		AOAC 985.35	Flame atomic absorption spectrophotometry	III		
Infant formula	Iron		AOAC 984.27	ICP emission spectroscopy	III		
Infant formula	Iron		AOAC 999.11 │ NMKL139	AAS after dry ashing	II		
Infant formula	Magnesium		ISO 8070 │ IDF 119	Flame atomic absorption spectrophotometry	II		
Infant formula	Magnesium		AOAC 985.35	Flame atomic absorption spectroscopy	III		
Infant formula	Magnesium		AOAC 984.27	ICP emission spectroscopy	III		
Infant formula	Manganese		AOAC 985.35	Flame atomic absorption spectrophotometry	II		
Infant formula	Manganese		AOAC 984.27	ICP emission spectroscopy	III		
Infant formula	Melamine		ISO/TS 15495 │ IDF/RM 230	LC-MS/MS	IV		
Infant formula	Molybdenum (Section B of CODEX STAN 72-1981 only)		EN 14083	Graphite furnace AAS after pressure digestion	II		
Infant formula	Molybdenum (Section		AOAC 2006.03	ICP emission spectroscopy	III		

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[6] General Codex methods are also available

	B of CODEX STAN 72-1981 only)						
Infant formula	Molybden um (Section B of CODEX STAN 72-1981 only)		AOAC 2011.19 | ISO 20649 | IDF 235	ICP-MS	III		
Infant formula	Niacin		AOAC 985.34 (niacin (preformed) and nicotinamide)	Microbioassay and turbidimetry	III		
Infant formula	Niacin		EN 15652 (Free and bound and phosphorylated forms measured either as aggregate of nicotinic acid + nicotinamide, or as individual forms)	HPLC	II[7]		
Infant formula	Pantothen ic acid		AOAC 2012.16 ISO 20639	UHPLC-MS/MS	II		
Infant formula	Phosphor us		AOAC 986.24	Spectrophotometry (molybdovanadate)	II		
Infant formula	Phosphor us		AOAC 984.27	ICP emission spectroscopy	III		
Infant formula	Riboflavin		AOAC 985.31[8]	Fluorimetry	III		
Infant formula	Riboflavin		EN 14152 (Measures natural and supplemental forms, free, bound and phosphorylated (FMN and FAD) aggregated and measured as riboflavin.)	HPLC	II		
Infant formula	Selenium		AOAC 996.16 or AOAC 996.17	Continuous hydride generation Flame	III		

[7] When published as EN method
[8] Care should be taken in the application of the method due to spectral interference

				atomic absorption spectrometry (HGAAS)			
Infant formula	Selenium		EN 14627	Hydride generation atomic absorption spectrometry (HGAAS)	II		
Infant formula	Selenium		AOAC 2006.03	ICP emission spectroscopy	III		
Infant formula	Selenium		AOAC 2011.19 | ISO 20649 | IDF 235	ICP-MS	III		
Infant formula	Sodium and potassium		AOAC 984.27	ICP emission spectrometry	III		
Infant formula	Sodium and potassium		ISO 8070 | IDF 119	Flame atomic absorption spectrophotometry	II		
Infant formula	Thiamine		AOAC 986.27[9]	Fluorimetry	III		
Infant formula	Thiamine		EN 14122 (Measures all vitamin B_1 forms (natural and added free, bound and phosphorylated) following extraction and conversion to thiamine)	HPLC with pre-or post column derivatization to thiochrom	II		
Infant formula	Total carbohydrates Moisture/ Total Solids Ash		AOAC 986.25 AOAC 990.19 or AOAC 990.20 ISO 6731|IDF 21 AOAC 942.05	Determination by difference Gravimetry Gravimetry	I		
Infant formula	Total fat		AOAC 989.05 ISO 8381|IDF 123	Gravimetry (Röse-Gottlieb)	I		
Infant formula	Total fat for milk-based infant formula		ISO 8262-1 |IDF 124-1	Gravimetry (Weibull-Berntrop)	I		

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[9] Care should be taken in the application of the method due to spectral interference

	(Products not completely soluble in ammonia)						
Infant formula	Total nucleotides		AOAC 2011.20 ISO 20638	LC	II		
Infant formula	Total phospholipids		AOCS Ja7b-91	Gas chromatography with suitable extraction and preparation procedures	III		
Infant formula	Vitamin A		EN 12823-1 (all-trans-retinol and 13-cis-retinol) Vitamin A (both natural + supplemental ester forms) aggregated and quantified as individual retinol isomers (13 - cis and all-trans)	HPLC	III		
Infant formula	Vitamin A Palmitate (Retinyl Palmitate), Vitamin A Acetate (Retinyl Acetate)		AOAC 2012.10 ISO 20633	HPLC	II		
Infant formula	Vitamin D		AOAC 992.26 D3 measured	HPLC	III		
Infant formula	Vitamin D		EN 12821 (D2 and/or D3 measured as single components. Hydroxylated forms not measured.) NMKL 167	HPLC	II		
Infant formula	Vitamin D		AOAC 995.05 D2 and D3 measured	HPLC	III		

Infant formula	Vitamin E		AOAC 992.03 Measures all rac-vitamin E (both natural + supplemental ester forms) aggregated and quantified as α-congeners	HPLC	III		
Infant formula	Vitamin E		EN 12822 (Measures Vitamin E (both natural + supplemental ester forms) aggregated and quantified as individual tocopherol congeners (α, β, γ, δ).	HPLC	II		
Infant formula	Vitamin B6		AOAC 985.32	Microbioassay	III		
Infant formula	Vitamin B6		EN 14166 (Aggregates free and bound pyridoxal, pyridoxine and pyridoxamine and measures as pyridoxine)	Microbioassay	III		
Infant formula	Vitamin B6		AOAC 2004.07 EN 14164 (Free and bound phosphorylated forms (pyridoxal, pyridoxine and pyridoxamine) converted and measured as pyridoxine)	HPLC	II		
Infant formula	Vitamin B6		EN 14663 (includes glycosylated forms) (Free and bound phosphorylated and glycosylated forms measured as the individual forms pyridoxal, pyridoxine and pyridoxamine)	HPLC	III		
Infant formula	Vitamin B12		AOAC 986.23 (Measures total vitamin B12 as cyanocobalamin)	Turbidimetric Method	II		
Infant formula	Zinc		AOAC 985.35	Flame atomic absorption spectroscopy	II		
Infant formula	Zinc		AOAC 984.27	ICP emission spectroscopy	III		

4. Sugars and Sweeteners, including honey

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorsement	Committee
Honey	Acidity		MAFF Validated Method V19 *J. Assoc. Public Analysts* (1992) 28 (4) 171-175	Titrimetry	I		
Honey	Diastase activity		IHC Method for Determination of Diastase activity with Phadebas, 2009 except that the incubation time should be increased from 15 to 30 minutes.		IV		
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 *J. Assoc. Public Analysts* (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	Titrimetry	I		
Sugars (dextrose anhydrous and	Solids, total		ISO 1741	Gravimetry (vacuum oven)	I		

dextrose monohydrate)							
Sugars (dextrose anhydrous and dextrose monohydrate, dried glucose syrup, glucose syrup, powdered dextrose, lactose)	Sulphated ash		ISO 5809	Single sulphonation	I		
Sugars (dextrose anhydrous and dextrose monohydrate)	Sulphur dioxide		ISO 5379	Acidimetry and nephelometry	IV		
Sugars (fructose)	pH		ICUMSA GS 1/2/3/4/7/8-23	Potentiometry	I		
Sugars (fructose)	Conductivity ash		ICUMSA GS 2/3-17	Conductimetry	I		
Sugars (fructose)	D-Fructose		ISO 10504	Liquid chromatography (refractive index detection)	II		
Sugars (fructose)	D-Glucose		ISO 10504	Liquid chromatography (refractive index detection)	II		
Sugars (fructose)	Loss on drying		ISO 1742	Gravimetry	I		
Sugars (fructose)	Sulphur dioxide		ISO 5379	Acidimetry and nephelometry	IV		
Sugars (glucose syrup and dried glucose syrup)	Reducing sugar		ISO 5377	Titrimetry	I		
Sugars (glucose syrup and dried glucose syrup)	Solids, total		ISO 1742	Gravimetry (vacuum oven)	I		
Sugars (glucose syrup and dried glucose syrup)	Sulphur dioxide		ISO 5379	Acidimetry and nephelometry	IV		

Sugars (lactose)	Lactose, anhydrous		ICUMSA GS 4/3-3	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	Potentiometry	I		
Sugars (plantation and mill white sugar)	Colour		ICUMSA GS9/1/2/3-8	Photometry	I		
Sugars (plantation or mill white sugar)	Conductivity ash		ICUMSA GS 1/3/4/7/8-13	Conductimetry	I		
Sugars (plantation or mill white sugar)	Invert sugar		ICUMSA GS 1/3/7-3	Titrimetry (Lane & Eynon)	I		
Sugars (plantation or mill white sugar)	Loss on drying		ICUMSA GS 2/1/3-15	Gravimetry	I		
Sugars (plantation or mill white sugar)	Polarization		ICUMSA GS 1/2/3-1	Polarimetry	II		
Sugars (plantation or mill white sugar)	Sulphur dioxide		ICUMSA GS 2/3-35 NMKL 135 EN 1988-2	Enzymatic method	II		
Sugars (powdered sugar and powdered dextrose)	Sulphur dioxide		ICUMSA GS 2/3-35 NMKL 135 EN 1988-2	Enzymatic method	II		
Sugars (powdered sugar)	Colour		ICUMSA GS 2/3-9	Photometry	I		
Sugars (powdered sugar)	Conductivity ash		ICUMSA GS 2/3-17	Conductimetry	I		
Sugars (powdered sugar)	Invert sugar		ICUMSA GS 2/3-5 after filtration if necessary to remove any anticaking agents	Titrimetry	I		

Sugars (powdered sugar)	Loss on drying		ICUMSA GS 2/1/3-15	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 NMKL 135 EN 1988-2	Enzymatic method	II		
Sugars (soft white sugar and soft brown sugar)	Conductivity ash		ICUMSA GS 1/3/4/7/8-13	Conductimetry	I		
Sugars (soft white sugar and soft brown sugar)	Invert sugar		ICUMSA GS 4/3-3 (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 (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	Gravimetry	I		
Sugars (soft white sugar and soft brown sugar)	Sucrose plus invert sugar		ICUMSA GS 4/3-7	Titrimetry	I		
Sugars (soft brown sugar)	Sulphated ash		ICUMSA GS 1/3/4/7/8-11	Gravimetry	I		
Sugars (soft white sugar and soft brown sugar)	Sulphur dioxide		ICUMSA GS 2/3-35 NMKL 135 EN 1988-2	Enzymatic method	II		
Sugars (soft white sugar)	Colour		ICUMSA GS 2/3-9	Photometry	I		
Sugars (white sugar)	Conductivity ash		ICUMSA GS 2/3-17	Conductimetry	I		
Sugars (white sugar)	Invert sugar		ICUMSA GS 2/3-5	Titrimetry	I		
Sugars (white sugar)	Loss on drying		ICUMSA GS 2/1/3-15	Gravimetry	I		

| Sugars (white sugar) | Polarization | | ICUMSA GS 2/3-1 | Polarimetry | II | | |
| Sugars (white sugar | Sulphur dioxide | | ICUMSA GS 2/3-35 NMKL 135 EN 1988-2 | Enzymatic method | II | | |

5.   Vegetable Proteins

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorse ment	Committee
Soy protein products	Ash		AOAC 923.03 ISO 2171: (Method B)	Gravimetry	I		
Soy protein products	Fat		CAC/RM 55 - Method 1	Gravimetry (extraction)	I		
Soy protein products	Fibre, crude		ISO 5498	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 (Method B)	Gravimetry, Direct	I		
Vegetable protein products	Fat		CAC/RM 55 - Method 1	Gravimetry (extraction)	I		
Vegetable protein products	Fibre, crude		AACC 32-17	Ceramic fiber filteration	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 protein products including wheat gluten	Protein		Vital wheat gluten and devitalized wheat gluten AOAC 979.09 (wheat protein in grain N x 5.7)	Kjeldahl	I		

Wheat protein products including wheat gluten	Protein		Solubilized wheat protein AOAC 920.87 (wheat protein in flour N x 5.7)	Kjeldahl	I		
Wheat protein products including Wheat gluten	Fibre, crude		AOAC 962.09	Ceramic fiber filteration	I		
Wheat protein products including Wheat gluten	Ash		AOAC 923.03 ISO 2171: method B	Gravimetry	I		

6.   Cereals, Pulses and Legumes

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorse ment	Committee
Certain pulses	Moisture		ISO 665	Gravimetry	I		
Degermed maize (corn) meal and maize (corn) grits	Ash		AOAC 923.03 ISO 2171 ICC Method No 104/1	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 ICC Method No 110/1	Gravimetry	I		
Degermed maize (corn) meal and maize (corn) grits	Particle size (granularit y)		AOAC 965.22	Sieving	I		
Degermed maize (corn) meal and maize (corn) grits	Protein		ICC Method No 105/1	Titrimetry, Kjeldahl digestion	I		

Durum wheat semolina and durum wheat flour	Ash (semolina)		AOAC 923.03 ISO 2171	Gravimetry	I		
Durum wheat semolina and durum wheat flour	Moisture		ISO 712 ICC 110/1	Gravimetry	I		
Durum wheat semolina and durum wheat flour	Protein (N x 5.7)		ICC 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	I		
Maize (corn)	Moisture		ISO 6540	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 minicolmn	III		
Peanuts (Cereals, shell-fruits and derived products (including peanuts))	Sum of aflatoxins B1, B2, G1 and G2		EN 12955 ISO 16050	HPLC with post column derivatization and immunoaffinity column clean up	III		
Peanuts (intended for	Aflatoxins, total		AOAC 979.18	Holaday-Velasco minicolumn	III		

further processing)							
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		
Pearl millet flour	Fat, crude		AOAC 945.38F; 920.39C	Gravimetry (ether extraction)	I		
Pearl millet flour	Fibre, crude		ISO 5498: (B.5 Separation)	Gravimetry	I		
Pearl millet flour	Moisture		ISO 712: ICC 110/1	Gravimetry	I		
Pearl millet flour	Protein		AOAC 920.87	Titrimetry, Kjeldahl digestion	I		
Sorghum flour	Ash		AOAC 923.03 ISO 2171 ICC 104/1	Gravimetry	I		
Sorghum 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		
Sorghum flour	Fat, crude		AOAC 945.38F; 920.39C	Gravimetry (ether extraction)	I		
Sorghum flour	Fibre, crude		ICC 113 ISO 6541	Gravimetry	I		
Sorghum flour	Moisture		ISO 712 ICC 110/1	Gravimetry	I		
Sorghum flour	Particle size (granularity)		AOAC 965.22	Sieving	I		
Sorghum flour	Protein		ICC 105/1	Titrimetry, Kjeldahl digestion	I		
Sorghum flour	Tannins		ISO 9648	Spectrophotometry	I		
Sorghum grains	Ash		AOAC 923.03 ISO 2171 ICC 104/1	Gravimetry	I		
Sorghum grains	Fat, crude		AOAC 945.38F, 920.39C	Gravimetry (ether extraction)	I		
Sorghum grains	Moisture		ISO 6540	Gravimetry	I		

Sorghum grains	Protein		ICC 105/1	Titrimetry, Kjeldahl digestion	I		
Sorghum grains	Tannins		ISO 9648	Spectrophotometry	I		
Wheat flour	Ash		AOAC 923.03 ISO 2171 ICC 104/1	Gravimetry	I		
Wheat flour	Fat acidity		AOAC 939.05	Titrimetry	I		
Wheat flour	Moisture		ISO 712: ICC 110/1	Gravimetry	I		
Wheat flour	Particle size (granularity)		AOAC 965.22	Sieving	I		
Wheat flour	Protein		ICC 105/1	Titrimetry, Kjeldahl digestion	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 (B.5 Separation)	Gravimetry	I		
Whole and decorticated pearl millet grains	Moisture		ISO 712 ICC 110/1	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 ICC 104/1	Gravimetry	I		
Whole maize (corn) meal	Fat, crude		AOAC 945.38F; 920.39C	Gravimetry (ether extraction)	I		
Whole maize (corn) meal	Moisture		ISO 712 ICC 110/1	Gravimetry	I		
Whole maize (corn) meal	Particle size		AOAC 965.22	Sieving	I		

	(granularity)						
Whole maize (corn) meal	Protein		ICC 105/1	Titrimetry, Kjeldahl digestion	I		

7.   Fats and Oils

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorsement	Committee
Fats and Oils (all)	Arsenic		AOAC 952.13	Colorimetry (diethyldithiocarbamate)	II		
Fats and Oils (all)	Arsenic		AOAC 942.17	Colorimetry (molybdenum blue)	III		
Fats and Oils (all)	Arsenic		AOAC 986.15	Atomic absorption spectrophotometry	III		
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	Gravimetry	I		
Fats and Oils (all)	Lead		AOAC 994.02 ISO 12193 or AOCS Ca 18c-91	Atomic absorption spectrophotometry (direct graphite furnace)	II		

Fats and Oils (all)	Matter volatile at 105°C		ISO 662	Gravimetry (open-drying)	I		
Fats and Oils (all)	Soap content		BS 684 Section 2.5; or AOCS Cc 17-95	Gravimetry	I		
Fats and oils not covered by individual standards	Acid Value		ISO 660; or AOCS Cd 3d-63	Titrimetry	I		
Fats and oils not covered by individual standards	Copper and Iron		AOAC 990.05 ISO 8294 or AOCS Ca 18b-91	Atomic absorption Spectrophotometry (direct graphite furnace)	II		
Fats and oils not covered by individual standards	Peroxide value		AOCS Cd 8b-90 ISO 3960	Titrimetry using iso-octane	I		
Fat spreads and blended spreads	Fat content		ISO 17189 | IDF 194	Gravimetry	I		
Fish oils	Fatty acid composition		ISO 5508	Gas chromatography	III		
Fish oils	Fatty acid composition		ISO 12966-2	Gas chromatography	III		
Fish oils	Fatty acid composition		AOCS Ce 1b-89	GLC	III		
Fish oils	Fatty acid composition		AOCS Ce 1-07	Capillary GLC	III		
Fish oils	Fatty acid composition		AOCS Ce 2b-11	Alkali hydrolysis	III		

Fish oils	Fatty acid composition		AOCS Ce 1a-13	Capillary GLC	III		
Fish oils	Fatty acid composition		AOCS Ce 2-66	Preparation of methyl esters by fatty acids	III		
Fish oils	Acid value		AOCS Ca 5a-40 AOCS CD 3D-63 ISO 3960 NMKL 38	Titration	I		
Fish oils	Peroxide value		AOCS Cd 8b-90 ISO 3960 NMKL 158	Titration	I		
Fish oils	Peroxide value		European Pharmacopeia 2.5.5 (Part B Iso-octane as solvent)	Titration	I		
Fish oils	P-Anisidine value		Aocs Cd 18-90	Spectrometry	I		
Fish oils	Vitamin A		European Parharmcopeia Monograph on Cod Liver Oil (Type A), monograph 01/2005:1192, with LC end-point 2.2.29	LC	III		
Fish oils	Vitamin A		EN 12823-1 (Determination of vitamin A by high performance liquid chromatograph – Part 1: Measurement of all-E-retinol and 13-Z-retinol	LC	III		
Fish oils	Vitamin D		EN 12821 (Determination of vitamin D by high performance liquid chromatography – Measurement of cholecalciferol (D3) or ergocalciferol (D2))	LC	III		
Fish oils	Vitamin D		NMKL 167 (Cholecalciferol (vitamin D3) and Ergocalciferol (vitamin D2). Determination by HPLC in foodstuffs	LC	III		
Named Animal Fats	Acidity		ISO 660; or AOCS Cd 3d-63	Titrimetry	I		
Named Animal Fats	Copper and Iron		AOAC 990.05 ISO 8294; or AOCS Ca 18b-91	Atomic absorption Spectrophotometry (direct graphite furnace)	II		

Named Animal Fats	GLC ranges of fatty acid composition		ISO 5508 and ISO 12966-2 or AOCS Ce 2-66 and Ce 1e-91 or Ce 1f-96	Gas chromatography of methyl esters	II		
Named Animal Fats	Iodine value (IV)		ISO 3961; or AOAC 993.20; or AOCS Cd 1d-92	Wijs-Titrimetry[110]	I		
Named Animal Fats	Peroxide value		AOCS Cd 8b-90 ISO 3960	Titrimetry using iso-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; or AOCS Cc 7-25	Refractometry	II		
Named Animal Fats	Saponification value		ISO 3657; or AOCS Cd 3-25	Titrimetry	I		
Named Animal Fats	Unsaponifiable matter		ISO 3596 or ISO 18609; or AOCS Ca 6b-53	Titrimetry after extraction with diethyl ether	I		
Named Animal Fats	Titre		ISO 935; or AOCS Cc 12-59	Thermometry	I		
Named Vegetable Oils	Acidity		ISO 660; or AOCS Cd 3d-63	Titrimetry	I		
Named Vegetable Oils	Apparent density		ISO 6883, with the appropriate conversion factor; or AOCS Cc 10c-95	Pycnometry	I		
Named Vegetable Oils	Baudouin test (modified Villavecchia or sesameseed oil test)		AOCS Cb 2-40	Colour reaction	I		

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[10] It is possible to calculate the Iodine Value from fatty acid composition data obtained by gas chromatography e.g. using AOCS Cd 1b-87

Named Vegetable Oils	Carotenoids, total		BS 684 Section 2.20	Spectrophotometry	II		
Named Vegetable Oils	Copper and iron		ISO 8294; or AOAC 990.05; or AOCS Ca 18b-91	AAS	II		
Named Vegetable Oils	Crismer value		AOCS Cb 4-35 and AOCS Ca 5a-40	Turbidity	I		
Named Vegetable Oils	GLC ranges of fatty acid composition		ISO 5508 and ISO 12966-2; or AOCS Ce 2-66 and Ce 1--62 or Ce 1h-05	Gas chromatography of methyl esters	II		
Named Vegetable Oils	Halphen test		AOCS Cb 1-25	Colorimetry	I		
Named Vegetable Oils	Insoluble impurities		ISO 663	Gravimetry	I		
Named Vegetable Oils	Iodine value (IV)		Wijs - ISO 3961; or AOAC 993.20; or AOCS Cd 1d-92; or NMKL 39	Wijs-Titrimetry	I		
Named Vegetable Oils	Lead		AOAC 994.02; or ISO 12193; or AOCS Ca 18c-91	Atomic Absorption	II		
Named Vegetable Oils	Moisture & volatile matter at 105°C		ISO 662	Gravimetry	I		
Named Vegetable Oils	Peroxide value (PV)		AOCS Cd 8b-90 or ISO 3960	Titrimetry	I		
Named Vegetable Oils	Refractive index		ISO 6320 or AOCS Cc 7-25	Refractometry	II		
Named Vegetable Oils	Reichert value and Polenske value		AOCS Cd 5-40	Titrimetry	I		

Named Vegetable Oils	Relative density		IUPAC 2.101[11] with the appropriate conversion factor See comment above (Named Animal Fats) 5	Pycnometry	I		
Named Vegetable Oils	Saponific ation value (SV)		ISO 3657 or AOCS Cd 3-25	Titrimetry	I		
Named Vegetable Oils	Slip point		ISO 6321 for all oils; AOCS Cc 3b-92 for all oils except palm oils; AOCS Cc 3-25 for palm oils only	Open ended capillary tube	I		
Named Vegetable Oils	Soap content		BS 684 Section 2.5; or AOCS Cc 17-95	Gravimetry	I		
Named Vegetable Oils	Sterol content		ISO 12228; or AOCS Ch 6-91	Gas chromatography	II		
Named Vegetable Oils	Tocopher ol content		ISO 9936 or AOCS Ce 8-89	HPLC	II		
Named Vegetable Oils	Unsaponif iable matter		ISO 3596; or ISO 18609; or AOCS Ca 6b-53	Gravimetry	I		
Olive Oils and Olive Pomace Oils	Absorben cy in ultra-violet		COI/T.20/Doc. No. 19 or ISO 3656 or AOCS Ch 5-91	Absorption in ultra violet	II		
Olive Oils and Olive Pomace Oils	Acidity, free (acid value)		ISO 660 or AOCS Cd 3d-63	Titrimetry	I		
Olive Oils and Olive Pomace Oils	Alpha-tocophero l		ISO 9936	HPLC	II		
Olive Oils and Olive Pomace Oils	Difference between the actual and		COI/T.20/Doc. no. 20 or AOCS Ce 5b-89	Analysis of triglycerides of HPLC and calculation	I		

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[11] The method is no longer available.

	theoretical ECN 42 triglyceride content						
Olive Oils and Olive Pomace Oils	Erythrodiol + uvaol		COI/T.20/Doc.no. 30	Gas chromatography	II		
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	Gravimetry	I		
Olive Oils and Olive Pomace Oils	Iodine value		ISO 3961 or AOAC 993.20 or AOCS Cd 1d-92 or NMKL 39	Wijs-Titrimetry	I		
Olive Oils and Olive Pomace Oils	Iron and copper		ISO 8294 or AOAC 990.05	AAS	II		
Olive Oils and Olive Pomace Oils	Lead		AOAC 994.02 or ISO 12193 or AOCS Ca 18c-91	AAS	II		
Olive Oils and Olive Pomace Oils	Moisture and volatile matter		ISO 662	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 or AOCS Cd 8b-90	Titrimetry	I		

Olive Oils and Olive Pomace Oils	Relative density		IUPAC 2.101, with the appropriate conversion factor. See comment above	Pycnometry	I		
Olive Oils and Olive Pomace Oils	Refractive index		ISO 6320 or AOCS Cc 7-25	Refractometry	II		
Olive Oils and Olive Pomace Oils	Saponification value		ISO 3657 or AOCS Cd 3-25	Titrimetry	I		
Olive Oils and Olive Pomace Oils	Sterol composition and total sterols		COI/T.20/Doc. no. 30 | ISO 12228-2 or AOCS Ch 6-91	Gas chromatography	II		
Olive Oils and Olive Pomace Oils	Stigmastadienes		COI/T.20/Doc. no. 11 or ISO 15788-1 or AOCS Cd 26-96	Gas chromatography	II		
Olive Oils and Olive Pomace Oils	Stigmastadienes		ISO 15788-2	HPLC	III		
Olive Oils and Olive Pomace Oils	Trans fatty acids content		COI/T.20/Doc no. 17 or ISO 15304 or AOCS Ch 2a-94	Gas chromatography of methyl esters	II		
Olive Oils and Olive Pomace Oils	Unsaponifiable matter		ISO 3596 or ISO 18609 or AOCS Ca 6b-53	Gravimetry	I		
Olive Oils and Olive Pomace Oils	Wax content		COI/T.20/Doc. no. 18 or AOCS Ch 8-02	Gas chromatography	II		

8. Milk and Milk Products

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorsement	Committee
Milk products	Iron		NMKL 139 AOAC 999.11	Atomic absorption spectrophotometry	II		

Milk products	Iron		NMKL 161 / AOAC 999.10	Atomic absorption spectrophotometry	III		
Milk products	Iron		AOAC 984.27	Inductively Coupled Plasma optical emission spectrophotometry	III		
Milk products	Iron		ISO 6732 | IDF 103	Photometry (bathophenanthroline)	IV		
Milk and Milk Products	Melamine		ISO/TS 15495 | IDF/RM 230	LC-MS/MS	IV		
Milk products (products not completely soluble in ammonia)	Milk fat		ISO 8262-3 | IDF 124-3	Gravimetry (Weibull-Berntrop)	I		
Blend of evaporated skimmed milk and vegetable fat	Total fat		ISO 1737 | IDF 13	Gravimetry (Röse-Gottlieb)	I		
Blend of evaporated skimmed milk and vegetable fat	Milk solids-not-fat [12](MSNF)		ISO 6731 | IDF 21 and ISO 1737| IDF 13	Calculation from total solids content and fat content Gravimetry (Röse-Gottlieb)	I		
Blend of evaporated skimmed milk and vegetable fat	Milk protein in MSNF[11]		ISO 8968-1 | IDF 20-1	Titrimetry (Kjeldahl)	IV		
Blend of evaporated skimmed milk and vegetable fat	Milk protein in MSNF[11]		AOAC 991/20	Titrimetry (Kjeldahl)	IV		
Reduced fat blend of	Total fat		ISO 1737| IDF 13	Gravimetry (Röse-Gottlieb)	I		

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[12] Milk total solids and Milk solids-not-fat (MSNF) content include water of crystallization of lactose

evaporated skimmed milk and vegetable fat							
Reduced fat blend of evaporated skimmed milk and vegetable fat	Milk solids-not-fat (MSNF)		ISO 6731 | IDF 21 and ISO 1737 | IDF 13	Calculation from total solids content and fat content Gravimetry (Röse-Gottlieb)	I		
Reduced fat blend of evaporated skimmed milk and vegetable fat	Milk protein in MSNF[11]		ISO 8968-1 | IDF 20-1/	Titrimetry (Kjeldahl)	IV		
Reduced fat blend of evaporated skimmed milk and vegetable fat	Milk protein in MSNF[11]		AOAC 991.20	Titrimetry (Kjeldahl)	IV		
Blend of skimmed milk and vegetable fat in powdered form	Total fat		ISO 1736 | IDF 9	Gravimetry (Röse-Gottlieb)	I		
Blend of skimmed milk and vegetable fat in powdered form	Water[13]		ISO 5537 | IDF 26	Gravimetry, drying at 87 °C	I		
Blend of skimmed milk and vegetable	Milk protein in MSNF[11]		ISO 8968-1 | IDF 20-1/	Titrimetry (Kjeldahl)	IV		

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[13] Water content excluding the crystallized water bound to lactose (generally known as "moisture content")

fat in powdered form							
Blend of skimmed milk and vegetable fat in powdered form	Milk protein in MSNF[11]						
Reduced fat blend of skimmed milk powder and vegetable fat in powdered form	Total fat		ISO 1736	IDF 9	Gravimetry (Röse-Gottlieb)	I		
Reduced fat blend of skimmed milk powder and vegetable fat in powdered form	Water[12]		ISO 5537	IDF 26	Gravimetry, drying at 87 °C	I		
Reduced fat blend of skimmed milk powder and vegetable fat in powdered form	Milk protein in MSNF[11]		ISO 8968-1	IDF 20-1	Titrimetry (Kjeldahl)	IV		
Reduced fat blend of skimmed milk powder and vegetable fat in powdered form	Milk protein in MSNF[11]		AOAC 991.20	Titrimetry (Kjeldahl)	IV		
Blend of sweetened condensed skimmed milk and vegetable fat	Total fat		ISO 1737	IDF 13	Gravimetry (Röse-Gottlieb)	I		
Blend of sweetened condensed	Sucrose		ISO 2911	IDF 35	Polarimetry	IV		

skimmed milk and vegetable fat							
Blend of sweetened condensed skimmed milk and vegetable fat	Milk solids-not-fat (MSNF)		ISO 6734 | IDF 15	Calculation from total solids content, fat content and sugar content	IV		
Blend of sweetened condensed skimmed milk and vegetable fat	Milk protein in MSNF[11]		ISO 8968-1|IDF 20-1/	Titrimetry (Kjeldahl)	IV		
Blend of sweetened condensed skimmed milk and vegetable fat	Milk protein in MSNF[11]		AOAC 991.20	Titrimetry (Kjeldahl)	IV		
Reduced fat blend of sweetened condensed skimmed milk and vegetable fat	Total fat		ISO 1737 | IDF 13	Gravimetry (Röse-Gottlieb)	I		
Reduced fat blend of sweetened condensed skimmed milk and vegetable fat	Milk solids-not-fat (MSNF)		ISO 6734 | IDF 15	Calculation from total solids content and sugar content	IV		
Reduced fat blend of sweetened condensed skimmed milk and vegetable fat	Milk protein in MSNF[11]		ISO 8968-1 | IDF 20-1	Titrimetry (Kjeldahl)	IV		

Reduced fat blend of sweetened condensed skimmed milk and vegetable fat	Milk protein MSNF[11]		AOAC 991.20	Titrimetry (Kjeldahl)	IV		
Butter	Copper		ISO 5738 | IDF 76AOAC 960.40	Photometry, diethyldithiocarbamate	II		
Butter	Lead		AOAC 972.25	Atomic absorption spectrophotometry	II		
Butter	Milk solids-not-fat (MSNF)		ISO 3727-2 | IDF 80-2	Gravimetry	I		
Butter	Milkfat		ISO 17189 | IDF 194	Gravimetry Direct determination of fat using solvent extraction	I		
Butter	Milk fat purity		ISO 17678 | IDF 202	Calculation from determination of triglycerides by gas chromatography	I		
Butter	Salt		ISO 1738 | IDF 12/ AOAC 960.29	Titrimetry (Mohr: determination of chloride, expressed as sodium chloride)	III		
Butter	Salt		ISO 15648 | IDF 179	Potentiometry (determination of chloride, expressed as sodium chloride)	II		
Butter	Vegetable fat (sterols)		ISO 12078 | IDF 159	Gas chromatography	II		
Butter	Vegetable fat (sterols)		ISO 18252 | IDF 200	Gas chromatography	III		

Butter	Water[12]		ISO 37271 | IDF 80	Gravimetry	I		
Cheese	Citric acid		ISO/TS 2963 | IDF/RM 34	Enzymatic method	IV		
Cheese	Citric acid		AOAC 976.15	Photometry	II		
Cheese	Milkfat		ISO 1735 | IDF 5	Gravimetry (Schmid-Bondzynski-Ratslaff)	I		
Cheese	Moisture		ISO 5534 | IDF 4	Gravimetry, drying at 102 °C	I		
Cheese (and cheese rind)	Natamycin		ISO 9233-1 | IDF 140-1	Molecular absorption spectrophotometry	III		
Cheese (and cheese rind)	Natamycin		ISO 9233-2 | IDF 140-2	HPLC	II		
Cheese	Sodium chloride		ISO 5943 | IDF 88	Potentiometry (determination of chloride, expressed as sodium chloride)	II		
Cheeses, individual	Dry matter (Total solids)		ISO 5534 | IDF 4	Gravimetry, drying at 102°C	I		
Cheeses, individual	Milk fat in dry matter		ISO 1735 | IDF 5	Gravimetry (Schmid-Bondzynski-Ratzlaff)	I		
Cheeses, individual	Dry matter (Total solids)		ISO 5534 | IDF 4	Gravimetry, drying at 102°C	I		
Cheeses in brine	Milk fat in dry matter (FDM)		ISO 1735 | IDF 5	Gravimetry (Schmid-Bondzynski-Ratzlaff)	I		
Cottage cheese	Fat-free dry matter		ISO 5534 | IDF 4 and ISO 1735 | IDF 5	Calculation from dry matter content and fat content Gravimetry, drying at 102 °C Gravimetry (Schmid-Bondzynski-Ratzlaff)	I		

Cottage cheese	Milk fat		ISO 1735 | IDF 5 ISO 8262-3 | IDF 124-3	Gravimetry (Schmid-Bondzynski-Ratzlaff) (for samples containing lactose up to 5%) Gravimetry (Weibull-Berntrop) (for samples containing lactose over 5%)	I I		
Cottage cheese	Milk fat in dry matter		ISO 8262-3 | IDF 124-3	Gravimetry (Weibull-Berntrop)	I		
Cheese, Unripened Including Fresh Cheese	Milk Protein		ISO 8968-1 | IDF 20-1	Titrimetry, Kjeldahl	I		
Cream and Prepared Creams	Milk protein		ISO 8968-1 | IDF 20-1	Titrimetry (Kjeldahl)	I		
Cream	Milkfat		ISO 2450 | IDF 16	Gravimetry (Röse-Gottlieb)	I		
Cream	Solids		ISO 6731 | IDF 21	Gravimetry (drying at 102°C)	I		
Creams Lowered in Milkfat Content	Milkfat		ISO 2450 | IDF 16 / AOAC 995.19	Gravimetry (Röse-Gottlieb)	I		
Creams, Whipped Creams and Fermented Creams	Milk solids-not-fat (MSNF) [11]		ISO 3727-2 | IDF 80-2 AOAC 920.116	Gravimetry	I		
Cream cheese	Dry matter		ISO 5534 | IDF 4	Gravimetry drying at 102 °C (forced air oven)	I		
Cream cheese	Moisture on fat free basis		ISO 5534 | IDF 4 ISO 1735 | IDF 5	Calculation from fat content and moisture content Gravimetry drying at 102°C (forced air oven)	I		

				Gravimetry (Schmid-Bondzynski-Ratzlaff)			
Dairy fat spreads	Milk fat purity		ISO 17678 | IDF 202	Calculation from determination of triglycerides by gas chromatography	I		
Dairy fat spreads	Total fat		ISO 17189 | IDF 194	Gravimetry Direct determination of fat using solvent extraction	I		
Dairy fat spreads	Vegetable fat (sterols)		ISO 12078 | IDF 159	Gas chromatography	II		
Dairy fat spreads	Vegetable fat (sterols)		ISO 18252 | IDF 200	Gas chromatography	III		
Edible casein products	Acids, free		ISO 5547 | IDF 91	Titrimetry (aqueous extract)	IV		
Edible casein products	Ash (including P2O5)		ISO 5545 | IDF 90 or[14] ISO 5544 | IDF 89	Gravimetry (ashing at 825 °C)	I		
Edible casein products	Copper		AOAC 985.35	Atomic absorption spectrophotometry	II		
Edible casein products	Copper		ISO 5738 | IDF 76	Colorimetry (diethyldiethiocarbamate)	III		
Edible casein products	Lactose		ISO 5548 | IDF 106	Photometry (phenol and H2SO4)	IV		
Edible casein products	Lead		NMKL 139 AOAC 999.11	Atomic absorption spectrophotometry	II		
Edible casein products	Lead		NMKL 161 / AOAC 999.10	Atomic absorption spectrophotometry	III		
Edible casein products	Lead		AOAC 972.25	Atomic absorption spectrophotometry	III		

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[14] Refer to scope of methods

Edible casein products	Lead		AOAC 982.23	Anodic stripping voltanmetry	III		
Edible casein products	Lead		ISO/TS 6733 | IDF/RM 133	Spectrophotometry (1,5-diphenylthiocarbazone)	IV		
Edible casein products	Milkfat		ISO 5543 | IDF 127	Gravimetry (Schmid-Bondzynski-Ratslaff)	I		
Edible casein products	pH		ISO 5546 | IDF 115	Electrometry	IV		
Edible casein products	Milk Protein (total N x 6.38 in dry matter)		ISO 8968-1 | IDF 20-1	Titrimetry, Kjeldahl	I		
Edible casein products	Sediment (scorched particles)		ISO 5739 | IDF 107	Visual comparison with standard disks, after filtration	IV		
Edible casein products	Water[12]		ISO 5550 | IDF 78	Gravimetry (drying at 102 °C)	I		
Emmental	Calcium >= 800mg/100g		ISO 8070 | IDF 119	Flame atomic absorption	IV		
Evaporated milks	Milk fat		ISO 1737 | IDF 13	Gravimetry (Röse-Gottlieb)	I		
Evaporated milks	Milk Protein in MSNF[11]		ISO 8968-1 | IDF 20-1	Titrimetry (Kjeldahl)	I		
Evaporated milks	Solids, total		ISO 6731 | IDF 21	Gravimetry (drying at 102°C)	I		
Fermented milks	Colony-forming units of yeasts		ISO 6611 | IDF 94	Colony-count at 25 °C	IV		

	and/or moulds						
Fermented milks	Dry matter (total solids)		ISO 13580 | IDF 151	Gravimetry (drying at 102 °C)	I		
Fermented milks	total acidity expressed as percentage of lactic acid		ISO/TS 11869 | IDF/RM 150	Potentiometry, titration to pH 8.30	I		
Fermented milks	Lactobacillus acidophilus		ISO 20128 | IDF 192	Colony count at 37 °C	I		
Fermented milks - Yoghurt and yoghurt products	Lactobacillus delbrueckii subsp bulgaricus & Streptococcus thermophilus		ISO 7889 | IDF 117	Colony count at 37°C	I		
Fermented milks - Yoghurt and yoghurt products	Lactobacillus delbrueckii subsp bulgaricus & Streptococcus		ISO 9232 | IDF 146	Test for strain identification	I		

	thermophilus						
Fermented milks	Microorganisms constituting the starter culture		ISO 27205 | IDF 149(Annex A)	Colony count at 25 °C, 30 °C, 37 °C and 45 °C according to the starter organism in question	IV		
Fermented milks	Milk fat		ISO 1211 | IDF 1 / AOAC 989.05	Gravimetry (Röse-Gottlieb)	I		
Fermented milks	Milk Protein		ISO 8968-1 | IDF 20-1	Titrimetry (Kjeldahl)	I		
Milk powders and cream powders	Acidity, titratable		ISO 6091 | IDF 86	Titrimetry, titration to pH 8.4	I		
Milk powders and cream powders	Milk fat		ISO 1736 | IDF 9	Gravimetry (Röse-Gottlieb)	I		
Milk powders and cream powders	Milk Protein		ISO 8968-1 | IDF 20-1	Titrimetry (Kjeldahl)	I		
Milk powders and cream powders	Scorched particles		ISO 5739 | IDF 107	Visual comparison with standard disks, after filtration	IV		
Milk powders and cream powders	Solubility Index		ISO 8156 | IDF 129	Centrifugation	I		
Milk powders and cream powders	Water[15]		ISO 5537 | IDF 26	Gravimetry (drying at 87°C)	I		
Milk fat Products	Copper		ISO 5738 | IDF 76 AOAC 960.40	Photometry, diethyldithiocarbamate	II		
Milk fat products	Fatty acids, free (expressed as oleic acid)		ISO 1740 | IDF 6	Titrimetry	I		

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[15] Water content excluding the crystallized water bound to lactose (generally known as "moisture content")

Milk fat products	Milk fat purity		ISO 17678 | IDF 202	Calculation from determination of triglycerides by gas chromatography	I		
Milk fat Products	Peroxide value (expressed as meq. of oxygen/kg fat)		ISO 3976 | IDF 74	Photometry	I		
Milkfat products (anhydrous milkfat)	Peroxide value		AOAC 965.33	Titrimetry	I		
Milk fat products	Vegetable fat (sterols)		ISO 12078 | IDF 159	Gas chromatography	II		
Milk fat products	Vegetable fat (sterols)		ISO 18252 | IDF 200	Gas chromatography	II		
Milk fat products	Water		ISO 5536 | IDF 23	Titrimetry (Karl Fischer)	II		
Milk fat products (anhydrous milk fat)	Peroxide value		ISO 3976 | IDF 74	Photometry	I		
Milkfat products (anhydrous milkfat)	Peroxide value		AOAC 965.33	Titrimetry	I		
Mozzarella	Milkfat in dry matter – with high moisture		ISO 1735 | IDF 5	Gravimetry after solvent extraction	I		
Mozzarella	Milkfat in dry matter		ISO 1735 | IDF 5	Gravimetry after solvent extraction	I		

	– with low moisture						
Sweetened condensed milk	Milkfat		ISO 1737 | IDF 13	Gravimetry (Röse-Gottlieb)	I		
Sweetened Condensed Milks	Milk Protein in MNSF[11]		ISO 8968-1 | IDF 20-1	Titrimetry (Kjeldahl)	I		
Sweetened Condensed Milks	Solids		ISO 6734 | IDF 15	Gravimetry, drying at 102 °C	I		
Whey cheeses by coagulation	Milk fat		ISO 1735 | IDF 5	Gravimetry (Schmid-Bondzynski-Ratzlaff)	I		
Whey cheeses by coagulation	Milk fat in dry matter		ISO 1735 | IDF 5 and ISO 5534 | IDF 4	Calculation from fat content and dry matter content Gravimetry (Schmid-Bondzynski-Ratzlaff) Gravimetry, drying at 102°C	I		
Whey cheeses by concentration	Milk fat		ISO 1854 | IDF 59	Gravimetry (Röse Gottlieb)	I		
Whey cheeses by concentration	Milk fat in dry matter		ISO 1854 | IDF 59and ISO 2920 | IDF 58	Calculation from fat content and dry matter content Gravimetry (Röse Gottlieb) Gravimetry, drying at 88 C	I		
Whey powders	Ash		ISO 5545 | IDF 90	Gravimetry (ashing at 825°C)	IV		
Whey powders	Copper		AOAC 985.35	Atomic absorption spectrophotometry	II		
Whey powders	Copper		ISO 5738 | IDF 76	Photometry (diethyldithiocarbamate)	III		
Whey Powders	Lactose		ISO 5765-1/2 | IDF 79-1/2	Enzymatic method: Part 1 - Glucose	II		

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorsement	Committee
				moiety or Part 2 - Galactose moiety			
Whey powders	Lead		AOAC 972.25	Atomic absorption spectrophotometry	II		
Whey powders	Milkfat		ISO 1736 | IDF 9	Gravimetry (Röse-Gottlieb)	I		
Whey powders	Milk protein (total N x 6.38)		ISO 8968-1 | IDF 20-1	Titrimetry (Kjeldahl)	I		
Whey powders	Moisture, "Free"		ISO 2920 | IDF 58	Gravimetry (drying at 88°C ±2°C)	IV		
Whey powders	Water[12]		ISO 5537 | IDF 26	Gravimetry (drying at 87°C)	I		

9.   Cocoa Products and Chocolate

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorsement	Committee
Chocolate and chocolate products	Cocoa butter		AOAC 963.15 IOCCC 14	Gravimetry (Soxhlet extraction)	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 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 AOAC 945.34; 925.41B; 920.80	Titrimetry/Distillation	I		
Chocolate and chocolate products	Moisture		IOCCC 26 or AOAC 977.10 (Karl Fischer method); or AOAC 931.04 or IOCCC 1	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	Gravimetry (Soxhlet extraction)	I		
Cocoa butter	Free fatty acids		ISO 660 or AOCS Cd 3d-63	Titrimetry	I		
Cocoa butter	Unsaponifiable matter		ISO 3596 or ISO 18609 or AOCS Ca 6b-53	Titrimetry after extraction with diethyl ether	I		
Cocoa powders (cocoa) and dry cocoa-sugar mixtures	Moisture		IOCCC 26 or AOAC 977.10 (Karl Fischer method)	Gravimetry	I		

10. Fish and Fishery Products

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorsement	Committee
Fish and fishery products	Histamine		AOAC 977.13	Fluorimetry	II		

Fish and fishery products	Histamine		See section III	See section III	-		
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		
Fish Sauce	Total nitrogen		AOAC 940.25	Digestion	I		
Fish Sauce	Amino acid nitrogen		AOAC 920.04 and AOAC 920.03	Determining formaldehyde titration method subtracting by ammoniacal nitrogen (magnesium oxide method)	I		
Fish Sauce	pH		AOAC 981.12 The pH shall be measured in a sample of fish sauce diluted with water to 1:10 using a pH meter. The dilution of fish sauce is necessary because of the high ionic strength in the undiluted sauce.	Electrometry	III		

Fish Sauce	Sodium chloride		AOAC 976.18	Potentiometry	II		
Fish Sauce	Sodium chloride		AOAC 937.09	Titrimetry	IV		
Fish Sauce	Histamine		AOAC 977.13	Fluorimetry	II		
Frozen abalone (covered by glaze)	Net weight		AOAC 963.18	Gravimetry	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	Potentiometry	II		

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 Stnadard)	Gravimetry	I		
Quick frozen fish sticks (fish fingers) and fish portions - breaded or in batter	Sodium chloride		AOAC 971.27	Potentiometry	II		
Salted Atlantic Herring and Salted Sprat	Water content		AOAC 950.46B	Air drying	I		

Salted Fish of the Gadidae Family	Salt		Described in CODEX STAN 167-1989	Titrimetry (Mohr) Salt determined as chloride expressed as sodium chloride	I		
Salted Fish and Dried Salted Fish of the Gadidae Family of Fishes	Salt Content Water content		Sampling and method described in the Standard	Gravimetry	I		
Smoked Fish, Smoke-Flavoured fish and Smoke-dried fish	Water phase salt		AOAC 952.08 AOAC 937.09 Described in standard[16]	Calculation	I		
Smoked Fish, Smoke-Flavoured fish and Smoke-dried fish	Water activity		NMKL 168	ISO 21807	Electrometry	III		
Sturgeon Caviar	Salt content		Described in CODEX STAN 167-1989	Titrimetry (Mohr) Salt determined as chloride expressed as sodium chloride	I		
Live and raw bivalve molluscs	Paralytic shellfish toxicity		AOAC 959.08	Mouse bioassay	IV		
Live and raw bivalve molluscs	Paralytic shellfish toxicity		AOAC 2011.27	Receptor binding assay	IV		
Live and raw bivalve molluscs	Saxitoxin (STX)		See section III	See section III			
Live and raw bivalve molluscs	NEO		See section III	See section III			
Live and raw bivalve molluscs	dcSTX		See section III	See section III			
Live and raw bivalve molluscs	GTX1		See section III	See section III			

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[16] % salt × 100 / (%water + %salt)

Live and raw bivalve molluscs	GTX2		See section III	See section III			
Live and raw bivalve molluscs	GTX3		See section III	See section III			
Live and raw bivalve molluscs	GTX4		See section III	See section III			
Live and raw bivalve molluscs	GTX5		See section III	See section III			
Live and raw bivalve molluscs	GTX6		See section III	See section III			
Live and raw bivalve molluscs	dcGTX2		See section III	See section III			
Live and raw bivalve molluscs	dcGTX3		See section III	See section III			
Live and raw bivalve molluscs	C1		See section III	See section III			
Live and raw bivalve molluscs	C2		See section III	See section III			
Live and raw bivalve molluscs	C3		See section III	See section III			
Live and raw bivalve molluscs	C4		See section III	See section III			
Live and raw bivalve molluscs	OA		See section III	See section III			
Live and raw bivalve molluscs	DTX1		See section III	See section III			
Live and raw bivalve molluscs	DTX2		See section III	See section III			
Live and raw bivalve molluscs	Domoic Acid		See section III	See section III			
Live and raw bivalve molluscs	AZA1		See section III	See section III			
Live and raw bivalve molluscs	AZA2		See section III	See section III			
Live and raw bivalve molluscs	AZA3		See section III	See section III			

11. Natural Mineral Waters

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorsement	Committee
Natural mineral waters	Calcium		ISO 7980	Atomic absorption spectrophotometry	III		
Natural mineral waters	Chloride		*Examination of Water Pollution Control.* 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	Titrimetry	III		
Natural mineral waters	Iron, dissolved		ISO 6332	Spectrophotometry	II		
Natural mineral waters	Magnesium		ISO 6059	Titrimetry	II		
Natural mineral waters	Magnesium		ISO 7980	Atomic absorption spectrophotometry	III		
Natural mineral waters	Phenols		ISO 6439	Spectrophotometry	I		
Natural mineral waters	Potassium		*Examination of Water Pollution Control.* WHO Pergamon Press (1982) Vol.2, pp. 142-145		II		
Natural mineral waters	Sodium		*Examination of Water Pollution Control.* WHO Pergamon Press (1982) Vol.2 pp. 148-151		II		
Natural mineral waters	Sodium		*Examination of Water Pollution Control.* WHO Pergamon Press (1982) Vol.2, pp. 151-152		II		
Natural mineral waters	Sulphates		ISO 9280	Gravimetry	III		
Natural mineral waters	Sulphide		*Handb. Spurenanal.* 1974		IV		
Natural mineral waters	Antimony		See section III	See section III			

Natural mineral waters	Arsenic		See section III	See section III			
Natural mineral waters	Barium		See section III	See section III			
Natural mineral waters	Borate		See section III	See section III			
Natural mineral waters	Cadmium		See section III	See section III			
Natural mineral waters	Chromium		See section III	See section III			
Natural mineral waters	Copper		See section III	See section III			
Natural mineral waters	Cyanide		See section III	See section III			
Natural mineral waters	Fluoride		See section III	See section III			
Natural mineral waters	Lead		See section III	See section III			
Natural mineral waters	Manganese		See section III	See section III			
Natural mineral waters	Mercury		See section III	See section III			
Natural mineral waters	Nickel		See section III	See section III			
Natural mineral waters	Nitrate		See section III	See section III			
Natural mineral waters	Nitrite		See section III	See section III			
Natural mineral waters	Selenium		See section III	See section III			
Natural mineral waters	Surface active agents		See section III	See section III			
Natural mineral waters	Mineral oil (hydrocarbon index)		See section III	See section III			

Natural mineral waters	PCB		See section III	See section III			
Natural mineral waters	Pesticide (organochlorine)		See section III	See section III			
Natural mineral waters	PAH		See section III	See section III			
Natural mineral waters	Saxitoxin (STX)		See section III	See section III			

12.   Soups and Broths

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorsement	Committee
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		
Bouillons and Consommés (soups and broths)	Sodium chloride		AIIBP Method No 2/4	Potentiometric titration (chloride expressed as sodium chloride)	II		

13.   Miscellaneous Products

Commodity	Provision	Codex Stan	Method	Principle	Type	Year of Endorsement	Committee
Chili sauce	pH		NMKL 179	Potentiometry	II		
Chili sauce	pH		AOAC 981.12	Potentiometry	III		
Chili sauce	Fill of containers		CAC/RM 46 (Codex general method)	Weighing	I		
Date Paste	Moisture		AOAC 934.06	Gravimetry	I		
Date Paste	Mineral impurities		ISO 762	Gravimetry	I		
Date Paste	Ash		AOAC 940.26	Gravimetry	I		
Date Paste	Acid Soluble Ash		AOAC 900.02D	Gravimetry, Calculation	I		
Edible cassava flour	Fibre, crude		ISO 5498 (B.5 separation)	Gravimetry	I		
Edible cassava flour	Granularity		ISO 2591-1	Sieving	I		
Edible cassava flour	Moisture		ISO 712	Gravimetry	I		
Fermented Soybean Paste	Total Nitrogen		AOAC 984.13	Kjeldahl	I		
Fermented Soybean Paste	Amino Nitrogen		AOAC 920.154 on the conditions specified in the standard[17]	Volumetry	I		
Fermented Soybean Paste	Moisture		AOAC 934.01 (≤70°C, ≤ 50 mm Hg)	Gravimetry	I		
Food grade salt	Arsenic		EuSalt/AS 015	ICP-OES	IV		
Food grade salt	Cadmium		EuSalt/AS 015	ICP-OES	III		

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[17] Section 9.2 Determination of Amino Nitrogen

Preparation of test samples: Weigh 2 g of sample into a 250 ml beaker and mix the sample with 100 ml of cold (15°C) NH3-free H2O and then stir the mixture for 60 min.

Next, decant the mixture through a quantitative filter and collect the filtrate in a 100 ml volumetric flask.

Endpoint - A pH meter shall be used to determine the endpoint instead of optical verification of colours

Food grade salt	Cadmium		EuSalt/AS 014	Atomic absorption spectrophotometry	IV		
Food grade salt	Calcium and magnesium		ISO 2482	Complexometric titrimetry	II		
Food grade salt	Calcium and magnesium		EuSalt/AS 009	Flame atomic absorption spectrometry	III		
Food grade salt	Calcium and magnesium		EuSalt/AS 015	ICP-OES	III		
Food grade salt	Copper		EuSalt/AS 015	ICP-OES	III		
Food grade salt	Insoluble matter		ISO 2479	Gravimetry	II		
Food grade salt	Iodine		EuSalt/AS 002	Titrimetry using sodium thiosulphate	II		
Food grade salt	Iodine		EuSalt/AS 019	ICP-OES	III		
Food grade salt	Iodine		WHO/UNICEF/ICCIDD method [18]Only applicable to a product which has been fortified with iodate	Titrimetry using sodium thiosulphate	IV		
Food grade salt	Lead		EuSalt/AS 015	ICP-OES	III		
Food grade salt	Lead		EuSalt/AS 013	Atomic absorption spectrophotometry	IV		
Food grade salt	Loss on drying		ISO 2483	Gravimetry (drying at 110°C)	I		
Food grade salt	Mercury		EuSalt/AS 012	Cold vapour atomic absorption spectrophotometry	IV		

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[18] Assessment of iodine deficiency disorders and monitoring their elimination. A guide for programme managers. Third edition, Annex 1: Titration method for determining salt iodate and salt iodine content. World Health Organization, Geneva, 2007. The report is available from http://www.who.int/nutrition/publications/micronutrients/iodine_deficiency/WHO_NHD_01.1/en/index.html

Food grade salt	Potassium		EuSalt/AS 008	Flame atomic absorption spectrophotometry	II		
Food grade salt	Potassium		EuSalt/AS 015	ICP-OES	III		
Food grade salt	Sodium chloride		Described in the Standard	Calculation	I		
Food grade salt	Sulphate		ISO 2480	Gravimetry	II		
Food grade salt	Sulphate		EuSalt/AS 015	ICP-OES	III		
Food grade salt	Sulphate		EuSalt/AS 018	Ion chromatography	III		
Foul medames	Sample Preparation		AOAC 945.68			–	
Foul medames	Salt content		AOAC 971.27 NMKL 178	Potentiometry	II		
Foul medames	Drained weight		AOAC 968.30	Sieving	I		
Gari	Ash		ISO 2171	Gravimetry	I		
Gari	Fibre, crude		ISO 5498 (B.5 separation)	Gravimetry	I		
Gari	Granularity		ISO 2591-1	Sieving	I		
Gari	Moisture		ICC 109/1 ISO 712	Gravimetry	I		
Ginseng Products	Moisture		AOAC 925.45 B (Dried ginseng) Quantity of sample: 2 g	Gravimetry	I		
Ginseng Products	Moisture		AOAC 925.45 D (Ginseng extract) Quantity of sample: 1.5 g (mixing with 20 g of sea sand)	Gravimetry	I		
Ginseng Products	Solids		AOAC 925.45 B (Dried ginseng) calculated by subtracting the content of water from 100% Quantity of sample: 2 g	Calculation	I		
Ginseng Products	Ash		AOAC 923.03 AACC Intl 08-01.01	Gravimetry	I		

Ginseng Products	Water-insoluble Solids		described in the Standard (Annex I)	Gravimetry	I		
Ginseng Products	Water-saturated n-butanol extracts		described in the Standard (Annex II)	Gravimetry	I		
Ginseng Products	Identification of ginsenosides Rb1 and Rf		described in the Standard (Annex III)	TLC or HPLC	IV		
Gochujang	Capsaicin		AOAC 995.03	HPLC	II		
Gochujang	Capsaicin		described in the Standard (Annex D)	Gas chromatography		IV	
Gochujang	Crude protein		AOAC 984.13 (Nitrogen conversion factor: 6.25)	Kjeldahl	I		
Gochujang	Moisture		AOAC 934.01 (≤ 70°C, ≤ 50 mm Hg)	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	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[19]	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		

[19] Can also be used to measure trans unsaturated fatty acids

Harissa	Acidity		ISO 750	Titrimetry	I		
Harissa	Acid insoluble ash		ISO 763	Gravimetry	I		
Harissa	Dry extract – soluble solids		ISO 2173	Refractometry	I		
Halwa Tehenia	Acidity		AOAC 924.53, AOAC 942.15	Titrimetry	IV		
Halwa tehenia	Ash		AOAC 900.02 | AACC Intl 8.14.01	Gravimetry	I		
Halwa tehenia	Fat		AOAC 963.15	Gravimetry	I		
Halwa tehenia	Moisture		AOAC 925.45 | AACC Intl 44.60.01	Gravimetry	I		
Halwa Tehenia	Sugars		ISI 28-1e[20]	Titrimetry	IV		
Humus with tehena	Salt content		AOAC 971.27 NMKL 178	Potentiometry	II		
Humus with tehena	Total acidity		AOAC 925.53	Titrimetry	I		
Non-fermented soybean products	Moisture content		AOAC 925.09 | AACCI 44-40.01	Gravimetry (vacuum oven)	I		
Non-fermented soybean products	Protein content		NMKL 6 or AACCI 46-16.01 or AOAC 988.05 or AOCS Bc 4-91 or AOCS Ba 4d-90 (Nitrogen factor 5.71)	Titrimetry, Kjeldahl digestion	I		
Sago Flour	Moisture Content		ISO 712	Gravimetry	I		
Sago Flour	Ash (inorganic extraneous matter)		ISO 2171	Gravimetry	I		
Sago Flour	Acidity		AOAC 939.05	Titrimetry	I		
Sago Flour	Crude Fibre		ISO 6541	Gravimetry	I		
Sago Flour	Starch		AOAC 920.44	Gravimetry	I		

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[20] http://www.starch.dk/isi/methods/28luff.htm

Tehena	Moisture Content		ISO 934	Gravimetry	I		
Tehena	Protein content		ISO 1871	Titrimetry, Kjeldahl	I		
Tehena	Total Ash		ISO 6884	Gravimetry	I		
Tehena	Acid Insoluble Ash		ISO 735	Gravimetry	I		
Tehena	Total Acidity		ISO 729	Titrimetry	I		
Tehena	Sesame oil		AOCS Cb 2-40 (Baudouin Test)	Colour reaction	I		

14.   **All Foods**

Commodity	Provision	**Codex Stan**	Method	Principle	Type	**Year of Endorsement**	**Committee**
All foods	Acesulfame K, Aspartame		EN 12856	High performance liquid chromatography	II		
All foods	Cyclamate		EN 12857	High performance liquid chromatography	II		
All foods	Cyclamate		NMKL 123	Spectrophotometry	III		
All foods	Saccharin		EN 12856	High performance liquid chromatography	III		
All Foods (see also meat products)	Nitrates and/or Nitrites		EN 12014-1	Part 1- General considerations	N/A		

Individual Foods [21]	Sulphites		EN 1988-1 AOAC 990.28	Part 1: Optimized Monier-Williams method	III		
Individual Foods [22]	Sulphites		EN 1988-2 NMKL 135	Part 2: Enzymatic method	III		
All foods (A) (General methods that do not measure the lower molecular weight fraction (i.e. monomeric units<=9))	Dietary fibres that do not include the lower molecular weight fraction (D)		AOAC 985.29 AACC Intl 32-05.01	Enzymatic gravimetry	I		
All foods (A) (General methods that do not measure the lower molecular weight fraction (i.e. monomeric units<=9))	Dietary fibres that do not include the lower molecular weight fraction and also includes determination for soluble and insoluble dietary fibres (D)		AOAC 991.43 AACC Intl 32-07.01 NMKL 129	Enzymatic gravimetry	I		
All foods (A)	Dietary fibres that		AOAC 993.21	Gravimetry	I		

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[21] Hominy, fruit juice, sea food
[22] Wine, dried apples, lemon juice, potato flakes, sultanas, beer

(General methods that do not measure the lower molecular weight fraction (i.e. monomeric units<=9))	do 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) (D)						
All foods (A) (General methods that do not measure the lower molecular weight fraction (i.e. monomeric units<=9))	Dietary fibres that do not include the lower molecular weight fraction. Provides sugar residue composition of dietary fibre polysaccharides, as well as		AOAC 994.13 AACC Intl 32- 25.01 NMKL 162	Enzymatic GC/ colorimetry gravimetry	I		

	content of Klason lignin (D)						
All foods (A) (General methods that do not measure the lower molecular weight fraction (i.e. monomeric units<=9) (B))	Insoluble dietary fibres in food and food products (D)		AOAC 991.42 (Specific for insoluble fibre) AACC Intl 32-20.01	Enzymatic gravimetry	I		
All foods (A) (General methods that do not measure the lower molecular weight fraction (i.e. monomeric units<=9) (B))	Soluble dietary fibres in food and food products (D)		AOAC 993.19 (Specific for soluble fibre)	Enzymatic gravimetry	I		
All foods (A) (General methods that measure both the higher (monomeric units > 9) and the lower molecular weight fraction (monomeric units <=9) (B))	Dietary fibres of higher and lower molecular weight, in food where resistant starches are not present		AOAC 2001.03 AACC Intl 32-41.01	Enzymatic gravimetry and Liquid chromatography	I		
All foods (A) (General methods that measure both the higher	Dietary fibres of higher and lower molecular		AOAC 2009.01 AACC Intl 32-45.01	Enzymatic-Gravimetry High Pressure Liquid Chromatography	I		

(monomeric units > 9) and the lower molecular weight fraction (monomeric units <=9) (B))	weight. The method is applicable in food that may, or may not, contain resistant starches						
All foods (A) (General methods that measure both the higher (monomeric units > 9) and the lower molecular weight fraction (monomeric units <=9) (B))	Insoluble and soluble dietary fibres of higher and lower molecular weight. The method is applicable in food that may, or may not, contain resistant starches		AACC Intl 32-50.01 AOAC 2011.25	Enzymatic-Gravimetry High Pressure Liquid Chromatography	I		
All foods (A) (Methods that measure individual specific components (monomeric units:	(1→3)(1→4) Beta-D-Glucans		AOAC 995.16 AACC Intl 32-23.01	Enzymatic	II		

the whole range for each type of components is covered) (B))							
All foods (A) (Methods that measure individual specific components (monomeric units: the whole range for each type of components is covered) (B))	Fructans (oligofructoses, inulin, hydrolyzed inulin, polyfructoses, fructooligosaccharides) (applicable to added fructans)		AOAC 997.08 AACC Intl 32-31.01	Enzymatic & HPAEC-PAD	II		
All foods (A) (Methods that measure individual specific components (monomeric units: the whole range for each type of components is covered) (B))	Fructans (oligofructoses, inulin, hydrolyzed inulin, polyfructoses, fructooligosaccharides) (not applicable highly depolymerised fructans)		AOAC 999.03 AACC Intl 32-32.01	Enzymatic & colorimetric	III		

All foods (A) (Methods that measure individual specific components (monomeric units: the whole range for each type of components is covered) (B))	Polydextrose		AOAC 2000.11 AACC Intl 32-28.01	HPAEC-PAD	II		
All foods (A) (Methods that measure individual specific components (monomeric units: the whole range for each type of components is covered) (B))	Trans-galacto-oligo saccharides		AOAC 2001.02 AACC Intl 32-33.01	HPAEC-PAD	II		
All foods (A) (Methods that measure individual specific components (monomeric units: the whole range for each type of components is covered) (B))	Resistant starch (Recommended for RS3)		AOAC 2002.02 AACC Intl 32-40.01	Enzymatic	II		
Yeast cell wall (Other methods(2) that have not been subjected to interlaboratory	Insoluble glucans and mannans of yeast cell wall		Eurasyp (European association for specialty yeast product) – LM Bonanno. Biospringer- 2004 – online version : http://www.eurasyp.org/public.technique.home.screen.	Chemical & HPAEC-PAD	IV		

evaluation under AOAC international guidelines) (B)	(for yeast cell wall only)						
All foods (Other methods(2) that have not been subjected to interlaboratory evaluation under AOAC international guidelines) (B)	Fructo-oligosacc harides (monomer ic units<5)		Ouarné et al. 1999 in *Complex Carbohydrates in Foods*. Edited by S. Sungsoo, L. Prosky & M. Dreher. Marcel Dekker Inc, New York	HPAEC-PAD	IV		
All foods (Other methods(2) that have not been subjected to interlaboratory evaluation under AOAC international guidelines) (B)	Non-starch polysacch arides (NSP) (C)		Englyst H.N, Quigley M.E., Hudson G. (1994) Determination of dietary fibre as non-starch polysaccharides with gas-liquid chromatographic high performance liquid chromatographic or spectrophotometric measurement of constituent sugars – Analyst 119, 1497-1509	Gas-Liquid Chromatography	IV		

(A) Users should consult the description of each method for the food matrices that were the subject of interlaboratory study in the Official methods of Analysis of AOAC International.

(B) Two issues are left for national authorities: to include monomeric units 3-9 and which isolated or synthetic compounds have physiological benefit. (Refer to the Guidelines for Nutrition Labelling (CAC/GL 2-1985).

(C) Quantitation lost for resistant starch. Refer to specific methods.

(D) Quantitation lost for inulin, resistant starch, polydextrose and resistant maltodextrins. Refer to specific methods.

SECTION II- CODEX GENERAL METHODS

Provision	Method	Principle	Commodities
Drained Weight	AOAC 968.30	Sieving Gravimetry	Processed fruits and vegetables Canned Stone Fruits Pickled cucumbers Preserved tomatoes Table olives Foul medames
Lead	AOAC 972.25	AAS (Flame absorption) Atomic absorption spectrophotometry	Processed fruits and vegetables Cooked cured chopped meat Canned corned beef Cooked cured ham Whey powders Edible casein products Butter Luncheon meat Cooked cured pork shoulder
Tin	AOAC 980.19	AAS	Processed fruits and vegetables
Soluble solids	AOAC 932.12 ISO 2173	Refractometry	Canned Apple Sauce Processed fruits and vegetables Jams (fruit preserves) and jellies

Salt in brine	AOAC 971.27	Potentiometry Titration	Fruit Juices and Nectars Table olives Processed tomato concentrates Pickled cucumbers
Sodium chloride	AOAC 971.27	Potentiometry Titration	Processed tomato concentrates Quick frozen fish sticks (fish fingers) and fish portions - breaded or in batter
Chloride in vegetable juice	AOAC 971.27	Potentiometry	Fruit Juices and Nectars
Chloride	AOAC 971.27	Potentiometry	Special foods
Salt content	AOAC 971.27	Potentiometry	Humus with tehena Foul medames
pH of brine	AOAC 981.12	Potentiometry Electrometry	Chili sauce Fish Sauce Processed fruits and vegetables
pH of brine	NMKL 179	Potentiometry	Processed fruits and vegetables Chili sauce Fruit Juices and Nectars Table olives

Lead	NMKL 139	AAS (Flame absorption) Atomic absorption spectrophotometry	Table olives Edible casein products
Iron	NMKL 139	Atomic absorption spectrophotometry	Milk products
Chloride	AOAC 971.27	Potentiometry	Special foods
Tin	AOAC 985.16	Atomic absorption spectrophotometry	Cooked cured pork shoulder Cooked cured ham Cooked cured chopped meat Canned corned beef Processed meat and poultry products Luncheon meat
Nitrites, potassium and/or sodium salt	AOAC 973.31	Colorimetry	Luncheon meat Cooked cured pork shoulder Cooked cured ham Cooked cured chopped meat Canned corned beef
Arsenic	AOAC 952.13	Colorimetry	Fats and Oils (all)
Arsenic	AOAC 942.17	Colorimetry (molybdenum blue)	Fats and Oils (all)
Arsenic	AOAC 986.15	Atomic absorption spectrophotometry	Fats and Oils (all)
Lead	ISO 12193	Atomic absorption spectrophotometry	Olive Oils and Olive Pomace Oils Named Vegetable Oils

		(direct graphite furnace) Atomic Absorption AAS	Fats and Oils (all)
Copper and Iron	AOCS Ca 18b-91	Atomic absorption Spectrophotometry (direct graphite furnace) AAS	Named Vegetable Oils Named Animal Fats Fats and oils not covered by individual standards
Lead	AOAC 982.23	Anodic stripping voltanmetry	Edible casein products
Sodium chloride	AOAC 971.21	Potentiometry	Quick frozen blocks of fish fillet, minced fish flesh and mixtures of fillets and minced fish flesh
Fill of containers	ISO 90-1	Weighing	Processed fruits and vegetables Table olives Canned Apple Sauce

SECTION III - METHODS PERFORMANCE CRITERIA

Commodity	Provision	Applicable Codex Stan	Minimum applicable range	LOD	LOQ	RSDR(%)	Recovery (%)	Applicable methods that meet the criteria	Principle	**Year of Endorsement**	**Committee**
fish and fishery products	Histamine (ML: 10 mg/100g average)		8 – 12 mg/100 g	1 mg/100 g	2 mg/100 g	16.0	90 – 107	AOAC 977.13 | NMKL 99, NMKL 196,	Fluorometric HPLC		
fish and fishery products	Histamine (ML: 20		16 – 24 mg/100 g	2 mg/100 g	4 mg/100 g	14.4	90 – 107	AOAC 977.13 | NMKL 99, NMKL 196,	Fluorometric HPLC		

	mg/100g each unit)										
Natural Mineral Waters	Antimony	108-1981	0.0028 mg/L	0.001 mg/L	0.002 mg/L	44	80-110	ISO 17294-2 ISO 15586 EPA 200.8	ICP-MS GF-AAS ICP-MS		
Natural Mineral Waters	Arsenic	108-1981	0.0056 mg/L	0.002 mg/L	0.004 mg/L	44	90-107	ISO 17294-2 ISO 15586 ISO 11969 EPA 200.8	ICP-MS GF-AAS AAS (Hydride) ICP-MS		
Natural Mineral Waters	Barium	108-1981	0.35 mg/L	0.07 mg/L	0.14 mg/L	34	95-105	ISO 11885 ISO 17294-2 EPA 200.8	ICP-OES ICP-MS ICP-MS		
Natural Mineral Waters	Borate	108-1981	3.1 mg/L	0.5 mg/L	1 mg/L	25	97-103	ISO 9390 ISO 11885 ISO 17294-2	Spectrophotometry ICP-OES[17] ICP-MS[23]		
Natural Mineral Waters	Cadmium	108-1981	0.0017 mg/L	0.0006 mg/L	0.0012 mg/L	44	80-110	ISO 11885 ISO 17294-2 ISO 15586 ISO 5961 (Section 3) EPA 200.8	ICP-OES ICP-MS GF-AAS AAS ICP-MS		
Natural Mineral Waters	Chromium	108-1981	0.028 mg/L	0.01 mg/L	0.02 mg/L	44	90-107	ISO 11885 ISO 17294-2 ISO 15586ISO 18412 (Cr VI) ISO 23913 (Cr VI) ISO 9174 (Section 4) EPA 200.8	ICP-OES ICP-MS GF-AAS Photometric CIA, spectrophotometry AAS ICP-MS		

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[23] Total Boron is determined

Natural Mineral Waters	Copper	108-1981	0.52 mg/L	0.1 mg/L	0.2 mg/L	32	97-103	ISO 11885 ISO 17294-2 ISO 15586 ISO 8288 EPA 200.8	ICP-OES ICP-MS GF-AAS Flame-AAS ICP-MS		
Natural Mineral Waters	Cyanide	108-1981	0.039 mg/L	0.014 mg/L	0.028 mg/L	44	90-107	ISO 14403ISO 6703-1	CFA Photometric, trimetric		
Natural Mineral Waters	Fluoride	108-1981	0.52 mg/L	0.1 mg/L	0.2 mg/L	32	97-103	ISO 10304-1 ISO 10359-1 (dissolved fluoride) ISO 10359-2 (inorganic bound)	LC of ions Electrochemical probe Digestion, distillation		
Natural Mineral Waters	Lead	108-1981	0.0056 mg/L	0.002 mg/L	0.004 mg/L	44	90-107	ISO 17294-2 ISO 15586 EPA 200.8	ICP-MS GF-AAS ICP-MS		
Natural Mineral Waters	Manganese	108-1981	0.18 mg/L	0.04 mg/L	0.08 mg/L	37	95-105	ISO 11885I SO 17294-2 ISO 15586 EPA 200.8	ICP-OES ICP-MS GF-AAS ICP-MS		
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		
Natural Mineral Waters	Nickel	108-1981	0.011 mg/L	0.004 mg/L	0.008 mg/L	44	90-107	ISO 17294-2 ISO 15586 EPA 200.8	ICP-MS GF-AAS ICP-MS		
Natural Mineral Waters	Nitrate	108-1981	37 mg/L	5 mg/L	10 mg/L	18	98-102	ISO 10304-1 ISO 13395 ISO 7890-3	LC of ions CFA, FIA, Spectrophot ometry Spectrophot ometry		
Natural Mineral Waters	Nitrite	108-1981	0.03 mg/L	0.01 mg/L	0.02 mg/L	44	95-105	ISO 10304-1 ISO 13395 ISO 6777	LC of ions UV CFA, FIA, Spectrophot ometry Spectrophot ometry		
Natural Mineral Waters	Selenium	108-1981	0.0056 mg/L	0.002 mg/L	0.004 mg/L	44	90-107	ISO 17294-2 ISO 15586 ISO 9965 EPA 200.8	ICP-MS GF-AAS AAS (Hydride) ICP-MS		
Natural Mineral Waters	Surface active agents		0.05 – 5.0 mg/L	0.05 mg/l		< 44	70-100	ISO 16265	CFA		
Natural Mineral Waters	Mineral oil (hydrocar bon index)		>0.1 mg/L			< 41	71-102	ISO 9377-2	GC		
Natural Mineral Waters	PCB		>15 ng/L			<20	70-130	AOAC 990.06	GC ECD		
Natural Mineral Waters	Pesticide (organoch lorine)		> 15 ng/ L			<20	70-130	AOAC 990.06	GC ECD		

Natural Mineral Waters	PAH		0.005 µg/L 0.04 µg/L 0.005 µg/L			<10 <18 <19	80-110 80-110 80-100	ISO 17993 ISO 7981-1 ISO 7981-2	HPLC FD TLC HPLC		
live and raw bivalve molluscs	Saxitoxin (STX)		0.05 – 0.2 mg/kg	0.01 mg/kg	0.02 mg/kg	44	50 – 130	AOAC 2005.06 NMKL 182, EN 14526 AOAC 2011.02 NMKL 197			
live and raw bivalve molluscs	NEO		0.05 – 0.2 mg/kg	0.01 mg/kg	0.02 mg/kg	44	50 – 130				
live and raw bivalve molluscs	dcSTX		0.05 – 0.2 mg/kg	0.01 mg/kg	0.02 mg/kg	44	50 – 130				
live and raw bivalve molluscs	GTX1		0.05 – 0.2 mg/kg	0.01 mg/kg	0.02 mg/kg	44	50 – 130				
live and raw bivalve molluscs	GTX2		0.1 – 0.5 mg/kg	0.03 mg/kg	0.06 mg/kg	38	50– 130				
live and raw bivalve molluscs	GTX3		0.1 – 0.5 mg/kg	0.03 mg/kg	0.06 mg/kg	38	50– 130				
live and raw bivalve molluscs	GTX4		0.05 – 0.2 mg/kg	0.01 mg/kg	0.02 mg/kg	44	50 – 130				
live and raw bivalve molluscs	GTX5		0.1 – 0.5 mg/kg	0.03 mg/kg	0.06 mg/kg	38	50– 130				
live and raw bivalve molluscs	GTX6		0.1 – 0.5 mg/kg	0.03 mg/kg	0.06 mg/kg	38	50– 130				

live and raw bivalve molluscs	dcGTX2		0.1 – 0.5 mg/kg	0.03 mg/kg	0.06 mg/kg	38	50– 130			
live and raw bivalve molluscs	dcGTX3		0.1 – 0.5 mg/kg	0.03 mg/kg	0.06 mg/kg	38	50– 130			
live and raw bivalve molluscs	C1		0.1 – 0.5 mg/kg	0.03 mg/kg	0.06 mg/kg	38	50– 130			
live and raw bivalve molluscs	C2		0.1 – 0.5 mg/kg	0.03 mg/kg	0.06 mg/kg	38	50– 130			
live and raw bivalve molluscs	C3		0.5 – 1.5 mg/kg	0.1 mg/kg	0.2 mg/kg	32	50– 130			
live and raw bivalve molluscs	C4		0.5 – 1.5 mg/kg	0.1 mg/kg	0.2 mg/kg	32	50– 130			
live and raw bivalve molluscs	OA		0.03 – 0.2 mg/kg	0.01 mg/kg	0.02 mg/kg	44	60-115	See reference below		
live and raw bivalve molluscs	DTX1		0.03 – 0.2 mg/kg	0.01 mg/kg	0.02 mg/kg	44	60-115			
live and raw bivalve molluscs	DTX2		0.1 – 0.5 mg/kg	0.03	0.06 mg/kg	38	60-115			
live and raw bivalve molluscs	Domoic Acid		14 – 26 mg/kg	2 mg/kg	4 mg/kg	20	80-110			
live and raw bivalve molluscs	AZA1		0.03 – 0.2 mg/kg	0.01 mg/kg	0.02 mg/kg	44	40 - 120	See reference below		

live and raw bivalve molluscs	AZA2		0.03 – 0.2 mg/kg	0.01 mg/kg	0.02 mg/kg	44	40 - 120				
live and raw bivalve molluscs	AZA3		0.03 – 0.2 mg/kg	0.01 mg/kg	0.02 mg/kg	44	40 - 120				

SECTION IV- METHODS DESCRIBED

Commodity	Provision	Applicable Codex Stan	Year of Endorsement	Committee
Processed fruits and vegetables Canned Apple Sauce Jams (fruit preserves) and jellies	**Fill of container**			

DESCRIPTION OF THE METHOD:

DETERMINATION OF WATER CAPACITY OF CONTAINERS (CAC/RM 46)
1. **SCOPE**
This method applies to glass containers.
2. **DEFINITION**
The water capacity of a container is the volume of distilled water at 20°C which the sealed container will hold when completely filled.
3. **PROCEDURE**
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.
4. **CALCULATION AND EXPRESSION OF RESULTS**
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.

Commodity	Provision	Applicable Codex Stan	Year of Endorsement	Committee
Dates	Identification of defects	CODEX STAN 143	1985	CCPFV

DESCRIPTION OF THE METHOD:

 1.   Gross Sample
Select at random not less than 2 individual packages per each 1,000 kg portion of the lot. From each individual package draw a sample of 300g and in any case sufficient to obtain a gross sample of not less than 3,000g. Use the gross sample for checking carefully for live infestation and general cleanliness of the product prior to its examination for compliance with other provisions of the standard.
 2.   Sub-samples for Examination and Testing
 Mix the gross sample well and take small quantities at random from many different places as follows:
 For moisture test - 500 grammes
 For pits (in pitted style) - 100 dates

For specified defects and size requirements - 100 dates				
Commodity	**Provision**	**Applicable Codex Stan**	**Year of Endorsement**	**Committee**
Desiccated coconut	Extraneous vegetable matter	CODEX STAN 177	1991	CCPFV

DESCRIPTION OF THE METHOD:

The determination is carried out by spreading 100 g of the sample in a thin layer against a white background and counting the extraneous material with the naked eye.

Commodity	**Provision**	**Applicable Codex Stan**	**Year of Endorsement**	**Committee**
Dried apricots	Identification of defects	CODEX STAN 130	1981	CCPFV

DESCRIPTION OF THE METHOD:

1. Definition of Defects
(a) Damaged fruit - fruit affected by any damage or blemish on the surface resulting from factors such as hail, etc., affecting more than 5 mm2 of fruit surface.
(b) Broken fruit - fruit affected by any damage resulting from improper halving or other mechanical action.
(c) Immature fruit - fruit which is generally deficient in sugar and may be sour in taste.
(d) Insect damaged fruit - fruit which is affected by insect damage or containing dead insects, mites or other pests.
(e) Mouldy fruit - fruit which is affected by mould to a visible extent, or decay.
(f) Dirty fruit - fruit affected by imbedded dirt or any other foreign material.

2. Allowances for Defects
The sample unit size shall be 1 kg.
The following allowances for defects shall apply to all the styles with the exception of the "Slab" and "Kamaradin" styles:

Defect	Maximum Allowed
Slabs	10% m/m
Damaged fruit	10% m/m
Broken fruit	10% m/m
Insect damaged and dirty fruit	5% m/m
Mouldy fruit	1% m/m
TOTAL	15% m/m
Immature fruit	10% m/m

Commodity	**Provision**	**Applicable Codex Stan**	**Year of Endorsement**	**Committee**

Pickled cucumbers	Volume fill by displacement	CODEX STAN 115	1981	CCPFV

DESCRIPTION OF THE METHOD:

1. Fill of container
1.1. Minimum Fill (Pickles plus Packing Medium)
The containers shall be well filled with cucumbers and the product (including packing medium) 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 the completely filled.
1.2 Minimum volume fill for whole and whole curved styles
The cucumber ingredient shall occupy not less than 55% for cured type and 53% for fresh-pack type
of the total capacity (volume) of the container.
1.3 Minimum volume fill for all styles except whole
The vegetable and fruit ingredient in styles other than whole shall occupy:
(a) not less than 55% in the case of fresh pack; and
(b) not less than 57% in the case of cured, of the total capacity (volume) of the container.
2. Acceptance
The requirements for fill of container (as specified in Section 1) shall be deemed to be complied with when the average from all containers is not less than the minimum required, provided that there is no unreasonable shortage in individual containers.

Commodity	**Provision**	**Applicable Codex Stan**	**Year of Endorsement**	**Committee**
Quick frozen strawberries	Drained fruit/drained berries	CODEX STAN 52	1981	CCPFV

DESCRIPTION OF THE METHOD:

Drained Fruit Ingredient
(a) The drained fruit ingredient is determined by thawing the product until it is practically free from ice crystals and then draining on a screen "3 mesh/cm" (8 mesh/inch) for two minutes. The weight of fruit retained on the screen is "drained fruit ingredient". Any of the material described in paragraph 3.5.1(a), (b) or (c) (of Codex Stan 52) found in the drained syrup shall be added to the drained fruit ingredient for the purpose of applying the tolerances.
(b) When dry sugar has been added to whole berries after freezing, the dry sugar shall be washed off with water before draining.

Commodity	**Provision**	**Applicable Codex Stan**	**Year of Endorsement**	**Committee**
Quick frozen spinach	Dry matter, Salt-free	CODEX STAN 77	1981	CCPFV

DESCRIPTION OF THE METHOD:

Commodity	Provision	Applicable Codex Stan	Year of Endorsement	Committee
Cooked Cured Ham	Gelatin, added	CODEX STAN 96	1981	CCPFV
DESCRIPTION OF THE METHOD: For products in which the amount of added gelatine is not known, 0.5% protein should be deducted from the percentage protein expressed on a fat-free basis.				

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	