

**BRIEFING ON METHODS FOR
DETERMINATION OF INORGANIC ARSENIC
AND METHYLMERCURY IN FOOD**

13.10.2017

ARSENIC IN CAP 132V

Schedule 1: MAXIMUM PERMITTED CONCENTRATION OF CERTAIN METALS NATURALLY PRESENT IN SPECIFIED FOODS

Metal	Description of food	Maximum permitted concentration in parts per million
Arsenic (AS_2O_3)	Solids being fish and fish products	6
	Solids being shellfish and shellfish products	10

Schedule 2 : MAXIMUM PERMITTED CONCENTRATION OF CERTAIN METALS PRESENT IN SPECIFIED FOODS

Metal	Description of food	Maximum permitted concentration in parts per million
Arsenic (AS_2O_3)	Solids other than-	
	(i) fish and fish products; and	1.4
	(ii) shellfish and shellfish products	
	All food in liquid form	0.14



ARSENIC IN PROPOSED AMENDMENTS

Arsenic (As)

Food items	Existing maximum permitted concentration (expressed as (As ₂ O ₃)) (ppm)	Existing maximum permitted concentration (expressed as inorganic arsenic) (ppm)	Proposed maximum level (ML) (mg/kg, unless otherwise specified)	Portion of the commodity/product to which the proposed ML applies (The proposed ML applies to the edible portion if there is no specification)
			Expressed as total arsenic	
Vegetables	1.4	1.1	0.5	Notes 1-8
Cereals	1.4	1.1	0.5	Not apply to rice.
Meat of animal	1.4	1.1	0.5	Applies to whole commodity (without bones). Also applies to fat from the meat.
Meat of poultry	1.4	1.1	0.5	Applies to whole commodity (without bones). Also applies to fat from the meat.
Animal, edible offal of	1.4	1.1	0.5	
Poultry, edible offal of	1.4	1.1	0.5	
Edible fats and oils (Note 9)	1.4 [solid food]/ 0.14 [liquid food]	1.1 [solid food]/ 0.1 [liquid food]	0.1	Not apply to fish oil.*
Fat spreads and blended spreads (Note 9)	1.4	1.1	0.1	
Salt, food grade (Note 9)	1.4	1.1	0.5	
Natural mineral waters (Note 9)	0.14	0.1	0.01 (mg/L)	
Bottled/packageged drinking waters (other than natural mineral waters) (Note 9)	0.14	0.1	0.01 (mg/L)	

ARSENIC IN PROPOSED AMENDMENTS

Arsenic (As)

Food items	Existing maximum permitted concentration (expressed as (As ₂ O ₃)) (ppm)	Existing maximum permitted concentration (expressed as inorganic arsenic) (ppm)	Proposed maximum level (ML) (mg/kg, unless otherwise specified)	Portion of the commodity/product to which the proposed ML applies (The proposed ML applies to the edible portion if there is no specification)
			Expressed as inorganic arsenic	
Rice, husked (Note 9)	1.4	1.1	0.35	
Rice, polished (Note 9)	1.4	1.1	0.2	
Aquatic animals	10	7.9	0.5	<p>Not apply to fish and intestine of sea cucumber.</p> <p>Applies to edible portion of the crab, including the liver and gonads or parts thereof after removal of shell.</p> <p>Cephalopods: Applies to whole commodity after removal of shell and viscera.</p> <p>Scallops: Applies to whole commodity after removal of shell and viscera.</p>
Fish	6	4.8	0.1	Whole commodity after removing the digestive tract.
Fish oil*	0.14	0.1	0.1	
Seaweed	1.4	1.1	1	

METHODS FOR INORGANIC ARSENIC

Available International / National Standards:

- China (GB): GB 5009.11-2014
- EU: EN 16802-2016
- USA: FDA EAM 4.11



CHINA (GB): GB 5009.11-2014

中华人民共和国国家标准

GB 5009.11—2014

食品安全国家标准

食品中总砷及无机砷的测定

第二篇 食品中无机砷的测定

第一法 液相色谱-原子荧光光谱法(LC-AFS)法

第二法 液相色谱-电感耦合等离子质谱法(LC-ICP/MS)



CHINA (GB): GB 5009. 11-2014

BS EN 16802:2016



BSI Standards Publication

Foodstuffs — Determination of elements and their chemical species — Determination of inorganic arsenic in foodstuffs of marine and plant origin by anion-exchange HPLC-ICP-MS



USA: FDA EAM 4.11



U.S. Department of Health & Human Services



U.S. Food and Drug Administration

Elemental Analysis Manual for Food and Related Products

4.11 Arsenic Speciation in Rice and Rice Products Using High Performance Liquid Chromatography- Inductively Coupled Plasma-Mass Spectrometric Determination

Version Draft 1.1 (November 2012)




MERCURY IN CAP 132V

Schedule 2 : MAXIMUM PERMITTED CONCENTRATION OF CERTAIN METALS PRESENT IN SPECIFIED FOODS

Metal	Description of food	Maximum permitted concentration in parts per million
Mercury (Hg)	All food in solid form All food in liquid form	0.5 0.5



METHYLMERCURY IN PROPOSED AMENDMENTS

Food items	Existing maximum permitted concentration (ppm)	Proposed maximum level (ML) (mg/kg, unless otherwise specified)	Portion of the commodity/product to which the proposed ML applies (The proposed ML applies to the edible portion if there is no specification)
		Expressed as methylmercury 	
Fish (Note 1)	0.5 (total mercury)	0.5	Whole commodity after removing the digestive tract.
		Expressed in total mercury	
Edible fungi	0.5 (total mercury)	0.1	
Rice, husked rice, polished rice, maize, maize flour, wheat, wheat flour	0.5 (total mercury)	0.02	



METHODS FOR METHYLMERCURY

Available International / National Standards:

- China (GB): GB 5009.17-2014
- EU: EN 16801-2016
- USA: FDA EAM 4.8



CHINA (GB): GB 5009.17-2014

中华人民共和国国家标准

GB 5009.17—2014

食品安全国家标准

食品中总汞及有机汞的测定

第二篇 食品中甲基汞的测定
液相色谱-原子荧光光谱联用方法



EU: EN 16801-2016

BS EN 16801:2016



**Foodstuffs — Determination
of elements and their chemical
species — Determination of
methylmercury in foodstuffs
of marine origin by isotope
dilution GC-ICP-MS**



USA: FDA EAM 4.8



U.S. Department of Health & Human Services



U.S. Food and Drug Administration

Elemental Analysis Manual for Food and Related Products

- 4.8 High Performance Liquid Chromatographic-Inductively Coupled Plasma-Mass Spectrometric Determination of Methylmercury and Total Mercury in Seafood

Version 1 (June 2008)



THANK YOU

