



# **International / National Standards for Heavy Metals in Food**

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# Local Situation

## ★ **Cap. 132V Food Adulteration (Metallic Contaminants) Regulations**

- **First Schedule: 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



# Local Situation – Cont'

- **Second Schedule: Maximum permitted concentration of certain metals in specified foods**

Metal	Description of food	Maximum permitted concentration in parts per million
Antimony (Sb)	Cereals and vegetables	1
	Fish, crab-meat, oysters, prawns and shrimps	1
	Meat of animal and poultry	1
Arsenic (As <sub>2</sub> O <sub>3</sub> )	Solids other than- (i) fish and fish products; and (ii) shellfish and shellfish products	1.4
	All food in liquid form	0.14
Cadmium (Cd)	Cereals and vegetables	0.1
	Fish, crab-meat, oysters, prawns and shrimps	2
	Meat of animal and poultry	0.2



# Local Situation – Cont'

- **Second Schedule: Maximum permitted concentration of certain metals in specified foods**

Metal	Description of food	Maximum permitted concentration in parts per million
Chromium (Cr)	Cereals and vegetables	1
	Fish, crab-meat, oysters, prawns and shrimps	1
	Meat of animal and poultry	1
Lead (Pb)	All food in solid form	6
	All food in liquid form	1
Mercury (Hg)	All food in solid form	0.5
	All food in liquid form	0.5
Tin (Sn)	All food in solid form	230
	All food in liquid form	230



# International / National Standards

## ★ Available International / National Standards:

- ★ Codex Alimentarius Commission (CODEX)
- ★ Mainland
- ★ US Food and Drug Administration (FDA)
- ★ European Commission (EU)
- ★ Australia



# Codex standards

## ★ CODEX STAN 193-1995 (*Amendment: 2010*)

### ★ Established Maximum of Five Heavy metals

- Arsenic
- Cadmium
- Lead
- Mercury (including methylmercury)
- Tin

CODEX GENERAL STANDARD FOR CONTAMINANTS AND TOXINS  
IN FOOD AND FEED

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CODEX STAN 193-1995

[http://www.codexalimentarius.net/download/standards/17/CXS\\_193e.pdf](http://www.codexalimentarius.net/download/standards/17/CXS_193e.pdf)



# Mainland

## ★ GB Standard

- GB 2762: Maximum levels of contaminants in food
- Established maximum levels of SIX heavy metals:
  - Arsenic
  - Cadmium
  - Chromium
  - Lead
  - Mercury (including methylmercury)
  - Tin



# USA

- US Food and Drug Administration (FDA)
  - Maximum level in selected food
    - Mercury (including methylmercury)
  - Allowable levels in bottled water
    - Arsenic
    - Antimony
    - Cadmium
    - Chromium
    - Lead
    - Mercury





# USA – Cont'

- Recommended maximum level in Candy likely to be frequently consumed by children

- Lead

- <http://www.fda.gov/Food/GuidanceComplianceRegulatoryInformation/GuidanceDocuments/Seafood/FishandFisheriesProductsHazardsandControlsGuide/ucm256690.htm>
- <http://www.fda.gov/Food/GuidanceComplianceRegulatoryInformation/GuidanceDocuments/ChemicalContaminantsandPesticides/ucm077904.htm>
- <http://www.fda.gov/Food/GuidanceComplianceRegulatoryInformation/GuidanceDocuments/ChemicalContaminantsandPesticides/ucm077969.htm#cadm>
- <http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=165.110>



# European Commission

- Commission Regulation (EC) No. 1881/2006 - maximum of FOUR heavy metals in foodstuff
  - Cadmium
  - Lead
  - Mercury
  - Tin

[http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/l\\_364/l\\_36420061220en00050024.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/l_364/l_36420061220en00050024.pdf)



# European Commission – Cont'

- Council Directive 98/83/EC

- Quality of water intended for human consumption including six heavy metals of interest

- Arsenic
    - Antimony
    - Cadmium
    - Chromium
    - Lead
    - Mercury

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1998:330:0032:0054:EN:PDF>



# Australia

- Food Standards Australia New Zealand (FSANZ)

- Food Standards Australia and New Zealand Standard 1.4.1 – Contaminants and Natural Toxicants laid down maximum levels of FIVE heavy metals in specified food

- Arsenic
    - Cadmium
    - Lead
    - Mercury
    - Tin

<http://www.comlaw.gov.au/Details/F2011C00542>



**Thank You**