

**ASEAN PRINCIPLES AND CRITERIA FOR THE ESTABLISHMENT OF MAXIMUM LEVEL FOR CONTAMINANTS AND TOXINS IN FOOD AND FEED****ANNEX II: ASEAN STANDARDS FOR CONTAMINANTS AND TOXINS IN FOOD AND FEED****ARSENIC**

Reference to JECFA	: 5 (1960), 10 (1967), 27 (1983), 33 (1988), 72 (2010)
Toxicological guidance value	: At the 72 <sup>nd</sup> meeting of JECFA (2010), the inorganic arsenic lower limit on the benchmark dose for a 0.5% increased incidence of lung cancer (BMDL 0.5) was determined from epidemiological studies to be 3.0 µg/kg bw/day (2–7 µg/kg bw/day based on the range of estimated total dietary exposure) using a range of assumptions to estimate total dietary exposure to inorganic arsenic from drinking-water and food. The JECFA noted that the provisional tolerable weekly intake (PTWI) of 15 µg/kg bw (equivalent to 2.1 µg/kg bw/day) is in the region of the BMDL 0.5 and therefore was no longer appropriate. The JECFA withdrew the previous PTWI.
Contaminant definition	: Arsenic: total (As-tot) when not otherwise mentioned; inorganic arsenic (As-in); or other specification
Synonyms	: As
Related code of practice	: <i>Code of Practice for Source Directed Measures to Reduce Contamination of Foods with Chemicals</i> (CXC 49-2001) <i>Code of Practice for the Prevention and Reduction of Arsenic Contamination in Rice</i> (CXC 77-2017)

<b>Commodity/Product Name</b>	<b>Maximum Level (ML) mg/kg</b>	<b>Portion of the Commodity/Product to which the ML applies</b>	<b>Notes/Remarks</b>
Edible fats and oils	0.1	Whole commodity	Relevant Codex commodity standards are CXS 19-1981, CXS 33-1981, CXS 210-1999, CXS 211-1999 and CXS 329-2017. For fish oils covered by CXS 329-2017, the ML is for fish oils (As-in). Countries or importers may decide to use their own screening when applying the ML for As-in in fish oils by analyzing total arsenic (As-tot) in fish oils. If the As-tot concentration is below the ML for As-in, no further testing is required, and the sample is determined to be compliant with the ML. If the As-tot concentration is above the ML for As-in, follow-up testing shall be conducted to determine if the As-in concentration is above the ML.

**CADMIUM**

Reference to JECFA	: 16 (1972), 33 (1988), 41 (1993), 55 (2000), 61 (2003), 64 (2005), 73 (2010)
Toxicological guidance value	: In view of the long half-life of cadmium, daily ingestion in food has a small or even a negligible effect on overall exposure. In order to assess long- or short-term risks to health due to cadmium exposure, dietary intake should be assessed over months, and tolerable intake should be assessed over a period of at least 1 month. To encourage this view, at the 73 <sup>rd</sup> meeting (2010) the JECFA decided to express the tolerable intake as a monthly value in the form of a provisional tolerable monthly intake (PTMI) and established a PTMI of 25 µg/kg bw.
Contaminant definition	: Cadmium, total
Synonyms	: Cd
Related code of practice	: <i>Code of Practice for Source Directed Measures to Reduce Contamination of Foods with Chemicals</i> (CXC 49-2001)

<b>Commodity/Product Name</b>	<b>Maximum Level (ML) mg/kg</b>	<b>Portion of the Commodity/Product to which the ML applies</b>	<b>Notes/Remarks</b>
Wheat	0.2	Whole commodity	The ML applies to common wheat, durum wheat, spelt and emmer.
Salt, food grade	0.5		Relevant Codex commodity standard is CXS 150-1985.
Natural mineral waters	0.003		Relevant Codex commodity standard is CXS 108-0981. The ML is expressed in mg/l

**LEAD**

Reference to JECFA	: 10 (1966), 16 (1972), 22 (1978), 30 (1986), 41 (1993), 53 (1999), 73 (2010)
Toxicological guidance value	: Based on the dose–response analyses, at the 73rd meeting (2010), JECFA estimated that the previously established PTWI of 25 µg/kg bw is associated with a decrease of at least 3 intelligence quotient (IQ) points in children and an increase in systolic blood pressure of approximately 3 mmHg (0.4 kPa) in adults. While such effects may be insignificant at the individual level, these changes are important when viewed as a shift in the distribution of IQ or blood pressure within a population. The JECFA therefore concluded that the PTWI could no longer be considered health protective and withdrew it.
Contaminant definition	: Lead, total
Synonyms	: Pb
Related code of practice	: <i>Code of Practice for the Prevention and Reduction of Lead Contamination in Foods (CXC 56-2004)</i> <i>Code of Practice for Source Directed Measures to Reduce Contamination of Foods with Chemicals (CXC 49-2001)</i>

Commodity/Product Name	Maximum Level (ML) mg/kg	Portion of the Commodity/Product to which the ML applies	Notes/Remarks
Milk	0.02	Whole commodity	Milk is the normal mammary secretion of milking animals obtained from one or more milkings without either addition to it or extraction from it, intended for consumption as liquid milk or for further processing. A concentration factor applies to partially or wholly dehydrated milks.
Secondary milk products	0.02	Whole commodity	The ML applies to the food as consumed.
Natural mineral waters	0.01		Relevant Codex commodity standard is CXS 108-1981. The ML is expressed in mg/l

**MERCURY**

Reference to JECFA	: 10 (1966), 14 (1970), 16 (1972), 22 (1978), 72 (2010)
Toxicological guidance value	: At the 72 <sup>nd</sup> meeting (2010), JECFA established a PTWI for inorganic mercury of 4 µg/kg bw. The previous PTWI of 5 µg/kg bw for total mercury, established at the sixteenth meeting, was withdrawn. The new PTWI for inorganic mercury was considered applicable to dietary exposure to total mercury from foods other than fish and shellfish. For dietary exposure to mercury from these foods the previously established PTWI for methyl mercury should be applied.
Contaminant definition	: Mercury, Total
Synonyms	: Hg
Related code of practice	: <i>Code of Practice for Source Directed Measures to Reduce Contamination of Foods with Chemicals</i> (CXC 49-2001)

Commodity/Product Name	Maximum Level (ML) mg/kg	Portion of the Commodity/Product to which the ML applies	Notes/Remarks
Natural mineral waters	0.001		Relevant Codex commodity standard is CXS 108-1981. The ML is expressed in mg/l.
Salt, food grade	0.1		Relevant Codex commodity standard is CXS 150-1985.