

Infant Formula (Powder) — HMTc Standard

Version 3.0 · 2026-08-05 · native basis: as-sold (powder) · all values µg/kg (ppb)

How every number is set

Each limit is the **strictest maximum level set by any credible government regulator worldwide** — the European Union, United Kingdom, Codex Alimentarius, Health Canada, China, India, Brazil, the Gulf states (GSO), and Australia/New Zealand — converted into the product’s own powder, as-sold basis. It is a lookup of sovereign law, carrying at most one disclosed basis conversion where the law is written in another basis, and a read-across where no government regulates the exact product. Where no government regulates the exact product, the limit is read across from the nearest government value for an analogous product. Percentile/occurrence methods are not used; ALARA is reserved for post-publication ratcheting.

Master limit table

Analyte	Tier	HMTc limit	Binding basis
Lead (Pb)	Tier 1	20	strictest government ML (EU 2023/915)
Inorganic arsenic (iAs)	Tier 1	20	strictest government ML (EU 2023/915)
Cadmium (Cd)	Tier 1	10	strictest government ML (EU 2023/915, cow-milk)
Mercury (tHg)	Tier 1	20	government read-across (China GB 2762, canned complementary → formula)
Nickel (Ni)	Tier 2	250	strictest government ML (EU 2023/915)
Aluminium (Al)	Tier 2	4000 cow / 8000 soy	FSANZ 500/1000 as-consumed × 8:1 conversion
Tin (Sn)	Tier 2	5000	strictest government ML (India FSSAI, as-sold)
Total chromium (Cr)	Tier 2	2000	government read-across (China GB 2762 milk powder → formula)

Tier 1 (Pb, Cd, iAs, Hg): zero-tolerance toxics, no safe threshold. Tier 2 (Ni, Al, Sn, Cr): 150% transitional allowance under the Status A–E framework. Total chromium is limited at 2000 (China GB 2762, dairy read-across); hexavalent chromium is controlled through it with mandatory speciation on any total-Cr above 100 ppb, and any quantifiable Cr-VI fails.

Derivation — every government’s number, side by side

Cow-milk formula powder. Each row lists every government maximum level in force worldwide, converted to the as-sold powder basis; the HMTc limit is the strictest, and the last column names the binding law. A blank means that government sets no limit for that product; a superscript-1 value is basis-converted, 2 is a read-across from the nearest government value.

Analyte	EU	UK	CX	CA	CN	IN	BR	GS	AN	HMTc	Binds
Lead (Pb)	20	50	80 ¹	80 ¹	80	200	80 ¹	80 ¹	80 ¹	20	EU
Inorg. arsenic	20	—	—	—	—	—	160 ¹	—	—	20	EU

Analyte	EU	UK	CX	CA	CN	IN	BR	GS	AN	HMTc	Binds
Cadmium (Cd)	10	10	—	—	—	100	80 ¹	—	—	10	EU
Mercury (tHg)	—	—	—	—	—	—	—	—	—	20 ²	CN·ra
Nickel (Ni)	250	—	—	—	—	—	—	—	—	250	EU
Aluminium (Al)	—	—	—	—	—	—	—	—	4000 ¹	4000	AN
Tin (Sn)	—	—	—	—	—	5000	—	—	—	5000	IN
Total chromium	—	—	—	—	2000 ³	—	—	—	—	2000	CN

All µg/kg, as-sold powder. ¹ basis-converted at the 8:1 powder-to-liquid ratio — the only such ratio a government legislates (China GB 2762 footnote c), matching physical reconstitution. ² no government sets a mercury ML for infant formula anywhere; nearest government value is China GB 2762 total-mercury 20 for canned complementary infant foods, applied by read-across (FDA: 195 samples, 76% non-detect, max 3.5). ³ total chromium via China GB 2762 milk-powder limit (dairy read-across); Cr-VI has no government limit anywhere, controlled via total-Cr + reflex speciation, any quantifiable Cr-VI fails. Soy powder differs in cadmium (20), nickel (400) and aluminium (8000). CX Codex · CA Canada · CN China · IN India · BR Brazil · GS Gulf/GSO · AN Australia/NZ.

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The literature baseline for every analyte is maintained independently at heavymetalindex.com. This certification standard applies those findings; the two are editorially separate by design.