

Ingredient class, clay/mineral/earth-derived (bentonite, diatomaceous earth, zeolite, shilajit),: HMTc Standard

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KEYWORDS

heavy metals, food safety, dietary exposure

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CORRESPONDENCE

Corrections are logged publicly on the article page, each with its date, the affected value, and the source that resolved it.

Abstract

The Heavy Metal Tested & Certified standard for Ingredient class: clay/mineral/earth-derived (bentonite, diatomaceous earth, zeolite, shilajit) (Dietary Supplements (Human)), stated as sold. Every limit is read across from the strictest sovereign infant-and-child-food maximum level for the analyte and applied to all supplements as a voluntary child-protective over-compliance; the laxer adult supplement floor (sovereign supplement MLs, USP <2232>, Prop 65) is disclosed and never selected.

1 | How every number on this standard is set

HMTc Method v2.0 — child-protective over-compliance: strictest sovereign infant-and-child-food ML by lookup, applied to all supplements; adult floor (supplement ML / USP <2232> / Prop 65 MADL) disclosed, never selected

2 | Master limit table

All values in ppb (µg/kg), as sold basis. A brand meeting every value qualifies for the mark.

ANALYTE	TIER	HMTc LIMIT	BASIS
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Lead (Pb)	Tier 1	10	human-grade read-across (Australia / New Zealand)
Cadmium (Cd)	Tier 1	5	human-grade read-across (European Union)
Total arsenic (tAs)	Tier 2	50	human-grade read-across (India)
Inorganic arsenic (iAs)	Tier 1	10	human-grade read-across (European Union)
Mercury, total (tHg)	Tier 1	4	human-grade read-across (Israel)
Methylmercury (MeHg)	Tier 1	≤ tHg	bounded by tHg (reflex speciation)
Nickel (Ni)	Tier 2	100	human-grade read-across (European Union)
Tin (Sn)	Tier 2	5,000	human-grade read-across (India)
Aluminium (Al)	Tier 2	500	human-grade read-across (Australia / New Zealand)
Total chromium (Cr)	Tier 2	1,000	human-grade read-across (China)
Hexavalent chromium (Cr-VI)	Tier 2	≤ Cr	bounded by Cr (reflex speciation)

3 | Derivation — where each number comes from

Every cell traces to one named sovereign maximum level (the strictest for the nearest analog), or to an explicit control, not-material, or species-bounded determination. No occurrence statistic selects a certification value.

ANALYTE	HMTC	SOVEREIGN ANALOG / DETERMINATION
Lead (Pb)	10	Australia / New Zealand — infant formula products

Cadmium (Cd)	5	European Union — infant formulae, follow-on formulae, food for special medical purposes intended for infants and young children, and young-child formulae placed on the market as liquid and manufactured from cow's milk proteins or cow's milk protein hydrolysates
Total arsenic (tAs)	50	India — Infant Milk substitute and Infant foods
Inorganic arsenic (iAs)	10	European Union — infant formulae, follow-on formulae, food for special medical purposes intended for infants and young children, and young-child formulae placed on the market as liquid
Mercury, total (tHg)	4	Israel — Infant and toddler formulas, ready-to-eat
Methylmercury (MeHg)	≤ tHg	MeHg carries no product-specific sovereign cell; it is a component of and bounded by its parent total tHg (MeHg ≤ tHg), an enforceable ceiling via reflex speciation rather than an empty cell.
Nickel (Ni)	100	European Union — infant/young-child formula, liquid
Tin (Sn)	5,000	India — Infant Milk substitute and Infant foods
Aluminium (Al)	500	Australia / New Zealand — infant formula, follow-on formula, and special medical purpose product for infants other than preterm-infant products
Total chromium (Cr)	1,000	China — human-food analog
Hexavalent chromium (Cr-VI)	≤ Cr	Cr-VI carries no product-specific sovereign cell; it is a component of and bounded by its parent total Cr (Cr-VI ≤ Cr), an enforceable ceiling via reflex speciation rather than an empty cell.

4 | Cite this standard

Pendergrass, K. (2026). *Ingredient class, clay/mineral/earth-derived (bentonite, diatomaceous earth, zeolite, shilajit),: HMTc standard* (Standard No. 10.83138/hmtc.std.16.supplements-clay-mineral-earth). Institute of Contaminant Standards. <https://doi.org/10.83138/hmtc.std.16.supplements-clay-mineral-earth>

References

- [1] Australia / New Zealand — human-food maximum levels
Binds Pb, Al. Strictest applicable human-food sovereign maximum for the nearest analog.
MAXIMUM LEVEL
- [2] China — human-food maximum levels
Binds Cr. Strictest applicable human-food sovereign maximum for the nearest analog.
MAXIMUM LEVEL
- [3] European Union — human-food maximum levels
Binds Cd, iAs, Ni. Strictest applicable human-food sovereign maximum for the nearest analog.
MAXIMUM LEVEL
- [4] Israel — human-food maximum levels
Binds tHg. Strictest applicable human-food sovereign maximum for the nearest analog.
MAXIMUM LEVEL
- [5] India — human-food maximum levels
Binds tAs, Sn. Strictest applicable human-food sovereign maximum for the nearest analog.
MAXIMUM LEVEL

STATUS AND LICENCE

A normative certification standard, editorially reviewed and version-controlled in-house; every value traces to a named sovereign maximum level, disclosed in the derivation. © 2026 Institute of Contaminant Standards / Heavy Metal Certified. All rights reserved.

COMPETING INTERESTS

This briefing is published by the Heavy Metal Tested & Certified (HMTc) program, operated by the Institute of Contaminant Standards. Its statements about government regulations, toxicology, and occurrence are sourced to the cited primary and expert-body records and to the independently maintained Heavy Metal Index; the program's own certification thresholds are not used as evidence for any factual claim made here.

DATA AVAILABILITY

The works this reference draws on are listed in full in the references above and on the briefing page at <https://heavymetalcertified.com/standards/supplements-clay-mineral-earth>. Primary legal instruments and expert-body assessments are named with their public identifiers; the underlying occurrence and toxicology corpus is maintained on the Heavy Metal Index.

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