

Coffee: HMTc Standard

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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 heavy-metal-safety standard for coffee in Beverages, evaluated on dry commodity as sold (green beans, roasted whole beans, ground coffee, coffee pods and capsules assessed on their coffee fill, instant coffee solids), reported on the as-sold article; this is the lot the applicant packages and the auditor samples. Every panel analyte carries a limit: eight numeric ceilings drawn from the strictest applicable government maximum level or a disclosed read-across, and three toxic species (inorganic arsenic, methylmercury, hexavalent chromium) bounded by their parent total under reflex speciation. The ready-to-drink coffee beverage is certified separately in its own as-consumed basis.

1 | How every number on this standard is set

HMTc Method v2.0 (government-limit-only): the strictest applicable sovereign maximum level for this exact beverage form and analyte in the row's declared native basis, with disclosed read-across where the exact cell is unregulated, a substantiated not-material determination where a species is bounded or is a method artifact, and a control where no defensible sovereign number and no supportable near-neighbour exist. Never occurrence-derived. Ready-to-drink and dry-commodity bases are never mixed and no brewing, dilution or reconstitution factor is invented.

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	500	government maximum level
Cadmium (Cd)	Tier 1	100	government maximum level
Total arsenic (tAs)	Tier 2	200	government maximum level
Inorganic arsenic (iAs)	Tier 1	≤ tAs	bounded by tAs (reflex speciation)
Mercury, total (tHg)	Tier 1	20	government maximum level
Methylmercury (MeHg)	Tier 1	≤ tHg	bounded by tHg (reflex speciation)
Nickel (Ni)	Tier 2	15,000	human-grade read-across (European Union)
Tin (Sn)	Tier 2	250,000	government maximum level
Aluminium (Al)	Tier 2	100,000	human-grade read-across (China)
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)	500	government maximum level
Cadmium (Cd)	100	government maximum level
Total arsenic (tAs)	200	government maximum level

Inorganic arsenic (iAs)	≤ tAs	No sovereign sets an inorganic-arsenic maximum level for coffee, and coffee is not a defining-inorganic--arsenic-pathway matrix carrying a species-only limit (unlike rice or apple juice). Under the Certification-Readiness Ruling's species-bounding clause, inorganic arsenic is a component of total arsenic bounded by the total-arsenic ceiling adjudicated for this row (iAs ≤ tAs = 200 ug/kg), an enforceable ceiling via reflex speciation rather than an empty cell or a fabricated number.
Mercury, total (tHg)	20	government maximum level
Methylmercury (MeHg)	≤ tHg	Methylmercury has no formation pathway in dry coffee: there is no marine bioaccumulation step in the supply chain and no anaerobic, sulfate-reducing methylation environment in the product or its process. Methylmercury is a component of total mercury (MeHg ≤ tHg) and is governed by and bounded by the total-mercury ceiling adjudicated for this row (20 ug/kg); no separate methylmercury ceiling is published.
Nickel (Ni)	15,000	European Union — human-food analog
Tin (Sn)	250,000	government maximum level
Aluminium (Al)	100,000	China — human-food analog
Total chromium (Cr)	1,000	China — human-food analog

Hexavalent chromium (Cr-VI)	≤ Cr	No sovereign sets a hexavalent-chromium limit for any food or beverage, and the in-matrix reduction argument that supports a not-material determination in an acidic aqueous beverage is unavailable here: this row's certified article is a dry bean, ground or solid with no aqueous phase in which Cr(VI) could reduce to Cr(III). Cr(VI) is a component of total chromium (Cr-VI ≤ total Cr) and is bounded by the total-chromium ceiling adjudicated for this row (1000 ug/kg), an enforceable ceiling via reflex speciation rather than an empty cell.
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4 | Cite this standard

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References

- [1] China — human-food maximum levels
Binds Al, Cr. Strictest applicable human-food sovereign maximum for the nearest analog.
MAXIMUM LEVEL
- [2] European Union — human-food maximum levels
Binds Ni. 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.

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/coffee>. Primary legal instruments and expert-body assessments are named

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.

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with their public identifiers; the underlying occurrence and toxicology corpus is maintained on the Heavy Metal Index.