

Soy sauce and fermented seasoning sauces: HMTc Standard

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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 Soy sauce and fermented seasoning sauces (Condiments, Sauces and Dressings), stated as consumed. Each analyte carries the strictest applicable government maximum level in the product's native basis, with a disclosed read-across or a mandatory control where no government regulates the exact product.

1 | How every number on this standard is set

HMTc Method v2.0 (government-limit default; face value, no reconstitution; read-across / control / not-material for unregulated cells; no occurrence percentiles)

2 | Master limit table

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

ANALYTE	TIER	HMTc LIMIT	BASIS
Lead (Pb)	Tier 1	1,000	government maximum level
Cadmium (Cd)	Tier 1	100	government maximum level

Total arsenic (tAs)	Tier 2	100	government maximum level
Inorganic arsenic (iAs)	Tier 1	$\leq$ tAs	bounded by tAs (reflex speciation)
Mercury, total (tHg)	Tier 1	50	government maximum level
Methylmercury (MeHg)	Tier 1	$\leq$ tHg	bounded by tHg (reflex speciation)
Nickel (Ni)	Tier 2	15,000	human-grade read-across (European Union)
Tin (Sn)	Tier 2	250,000	human-grade read-across (Singapore)
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	$\leq$ 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)	1,000	government maximum level
Cadmium (Cd)	100	government maximum level
Total arsenic (tAs)	100	government maximum level
Inorganic arsenic (iAs)	$\leq$ tAs	iAs carries no product-specific sovereign cell; it is a component of and bounded by its parent total tAs (iAs $\leq$ tAs), an enforceable ceiling via reflex speciation rather than an empty cell.
Mercury, total (tHg)	50	government maximum level

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)	15,000	European Union — human-food analog
Tin (Sn)	250,000	Singapore — human-food analog
Aluminium (Al)	100,000	China — human-food analog
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

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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
- [3] Singapore — human-food maximum levels
Binds 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

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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/soy-sauce-fermented>. 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.

PUBLICATION HISTORY

This revision 2026-08. The full dated record is maintained at <https://heavymetalcertified.com/standards/soy-sauce-fermented>.