Metal and alloy cookware (cast iron, stainless steel, aluminum): 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.

KEYWORDS

heavy metals, food safety, dietary exposure

PUBLICATION HISTORY

This revision 2026-08.

Abstract

The Heavy Metal Tested & Certified heavy-metal-safety standard for metal and alloy cookware (cast iron, stainless steel, aluminum) in Food-Contact Consumer Goods and Kitchenware, evaluated on element RELEASE FROM THE FOOD-CONTACT ALLOY INTO FOOD OR A FOOD SIMULANT, µg/kg of food, determined against an acidic simulant at the article's stated use temperature and duration with the third successive release governing for repeat-use articles. This is a RELEASE basis on the food, not the plastics-simulant convention and not a total-content basis: the percent-by-weight lead limits on food-contact metals and solder are a separate MATERIAL-CONTENT obligation, disclosed as companions and never published here.. No government sets a numeric heavy-metal limit for this product form, so every panel analyte is held under mandatory analytical control or a substantiated not-material determination rather than an invented ceiling.

1 | How every number on this standard is set

HMTc Method v2.0 (government-limit-only): the strictest applicable sovereign maximum for this exact product form expressed as specific element migration into food or a food simulant; a disclosed read-across from the nearest applicable sovereign value in the same basis where the food-contact material family is expressly excluded from or not reached by that instrument; a substantiated not-material determination; or a control. No cell is occurrence-derived, and no cell borrows a value across a basis.

2 | Master limit table

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

ANALYTE	HMTC LIMIT	BASIS
Lead (Pb)	10	read-across (China)
Cadmium (Cd)	2	read-across (China)
Total arsenic (tAs)	2	read-across (China)
Inorganic arsenic (iAs)	≤ tAs	bounded by tAs (reflex speciation)
Mercury, total (tHg)	10	read-across (EU 10/2011)
Methylmercury (MeHg)	≤ tHg	bounded by tHg (reflex speciation)
Nickel (Ni)	140	read-across (China)
Tin (Sn)	100,000	read-across (China)
Aluminium (Al)	1,000	read-across (China)
Total chromium (Cr)	250	read-across (China)
Hexavalent chromium (Cr-VI)	≤ 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	read-across (China); Food contact metal - impurity element
Cadmium (Cd)	2	read-across (China); Food contact metal - impurity element
Total arsenic (tAs)	2	read-across (China); Food contact metal - impurity element (total As)
Inorganic arsenic (iAs)	≤ tAs	bounded by tAs (reflex speciation)
Mercury, total (tHg)	10	read-across (EU 10/2011); plastic food-contact materials and articles
Methylmercury (MeHg)	≤ tHg	bounded by tHg (reflex speciation)
Nickel (Ni)	140	read-across (China); Food contact metal - alloying element

Tin (Sn)	100,000	read-across (China); Food contact metal - alloying element (not tinned thin-sheet)
Aluminium (Al)	1,000	read-across (China); Food contact metal - alloying element (coated)
Total chromium (Cr)	250	read-across (China); Food contact metal - alloying element (total Cr)
Hexavalent chromium (Cr-VI)	≤ Cr	bounded by Cr (reflex speciation)

4 | Cite this standard

Pendergrass, K. (2026). *Metal and alloy cookware (cast iron, stainless steel, aluminum): HMTc standard* (Standard No. 10.83138/hmtc.std.23.cookware-metal-alloy). Institute of Contaminant Standards. https://doi.org/10.83138/hmtc.std.23.cookware-metal-alloy

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References

[1] China
Binds Pb, Cd, tAs, Ni, Cr, Sn, Al. Food contact metal - impurity element.
READ-ACROSS

[2] EU 10/2011
Binds tHg. plastic food-contact materials and articles.
READ-ACROSS

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 standard 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 standard draws on are listed in full in the references above and on the standard page at https://heavymetalcertified.com/standards/cookware-metal-alloy. 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/cookware-metal-alloy.