

Marine predatory fish (tuna, swordfish, shark, king mackerel, marlin): HMTc Standard

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KEYWORDS

heavy metals, food safety, dietary exposure

PUBLICATION HISTORY

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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 marine predatory fish, tuna, swordfish, shark, king mackerel, marlin, billfish, stated as consumed (edible portion, wet weight). Predatory species carry the higher species-specific mercury ceiling every government sets for them; every limit is the strictest maximum level any credible government sets for the product, with a disclosed read-across where none regulates the exact analyte.

1 | How every number on this standard is set

HMTc Method v2.0 (government-limit default, 8:1 basis, read-across)

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	200	government maximum level
Cadmium (Cd)	Tier 1	50	government maximum level

Total arsenic (tAs)	Tier 2	1,000	government maximum level
Inorganic arsenic (iAs)	Tier 1	100	government maximum level
Mercury, total (tHg)	Tier 1	1,000	government maximum level
Methylmercury (MeHg)	Tier 1	1,000	government maximum level
Nickel (Ni)	Tier 2	2,000	human-grade read-across (European Union)
Tin (Sn)	Tier 2	200,000	human-grade read-across (European Union)
Aluminium (Al)	Tier 2	100,000	human-grade read-across (China)
Total chromium (Cr)	Tier 2	1,000	government maximum level
Hexavalent chromium (Cr-VI)	Tier 2	10	human-grade read-across (US-CA)

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)	200	government maximum level
Cadmium (Cd)	50	government maximum level
Total arsenic (tAs)	1,000	government maximum level
Inorganic arsenic (iAs)	100	government maximum level
Mercury, total (tHg)	1,000	government maximum level
Methylmercury (MeHg)	1,000	government maximum level
Nickel (Ni)	2,000	European Union — human-food analog
Tin (Sn)	200,000	European Union — human-food analog
Aluminium (Al)	100,000	China — human-food analog

Total chromium (Cr)	1,000	government maximum level
Hexavalent chromium (Cr-VI)	10	US-CA — human-food analog

4 | Cite this standard

Pendergrass, K. (2026). *Marine predatory fish (tuna, swordfish, shark, king mackerel, marlin): HMTc standard* (Standard No. 10.83138/hmtc.std.6.fish-marine-predatory). Institute of Contaminant Standards. <https://doi.org/10.83138/hmtc.std.6.fish-marine-predatory>

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References

- [1] China — human-food maximum levels
Binds Al. Strictest applicable human-food sovereign maximum for the nearest analog.
MAXIMUM LEVEL
- [2] European Union — human-food maximum levels
Binds Ni, Sn. Strictest applicable human-food sovereign maximum for the nearest analog.
MAXIMUM LEVEL
- [3] US-CA — human-food maximum levels
Binds Cr-VI. 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/fish-marine-predatory>. 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.

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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