

Fish-based / marine-protein pet diets: 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 human-grade standard for fish-based / marine-protein pet diets, stated as consumed. Pet food is legally feed; HMTc voluntarily certifies each analyte to the strictest human-food sovereign maximum for the nearest analog, with the laxer feed-law floor disclosed for contrast.

1 | How every number on this standard is set

Pet food is legally governed by feed law — EU Directive 2002/32/EC on undesirable substances in animal feed, FDA Center for Veterinary Medicine guidance, and AAFCO model regulations — whose maximum levels are generally laxer than the corresponding human-food limits. Japan (FAMIC pet-food standard) and China (draft pet-food guidance) set enforced or proposed pet-food maxima in the same lax range. The HMTc standard for each analyte is not the feed limit: it is the strictest applicable human-food sovereign maximum for the nearest human-food analog, adopted as a voluntary human-grade over-compliance. The feed floor is disclosed on every row and never selects the number.

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	human-grade read-across (FJ)

Cadmium (Cd)	Tier 1	50	human-grade read-across (Gulf (GSO))
Total arsenic (tAs)	Tier 2	1,000	human-grade read-across (Paraguay)
Inorganic arsenic (iAs)	Tier 1	100	human-grade read-across (European Union)
Mercury, total (tHg)	Tier 1	300	human-grade read-across (European Union)
Methylmercury (MeHg)	Tier 1	≤ tHg	bounded by tHg (reflex speciation)
Nickel (Ni)	Tier 2	800	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	human-grade read-across (Hong Kong)
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)	200	FJ — Muscle meat of fish, excluding those listed below
Cadmium (Cd)	50	Gulf (GSO) — Muscle meat of fish with exception mentioned
Total arsenic (tAs)	1,000	Paraguay — raw, frozen, or refrigerated fish
Inorganic arsenic (iAs)	100	European Union — muscle meat of fish, species other than those listed under Annex I 3.4.5.2

Mercury, total (tHg)	300	European Union — listed lower-mercury fish and cephalopods/marine gastropods, including cod, herring, mackerel, salmon/trout species listed, sardine/pilchard, sole, whiting, and others
Methylmercury (MeHg)	≤ tHg	Methylmercury is a component of total mercury (MeHg ≤ tHg). No human-food analog sets a methylmercury limit below the binding total-mercury read-across (300 µg/kg), so methylmercury is governed by and bounded by the total-mercury ceiling; no separate methylmercury ceiling is published.
Nickel (Ni)	800	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	Hong Kong — Fish
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. Strictest applicable human-food sovereign maximum for the nearest analog.
 MAXIMUM LEVEL
- [2] European Union — human-food maximum levels
 Binds iAs, tHg, Ni, Sn. Strictest applicable human-food sovereign maximum for the nearest analog.
 MAXIMUM LEVEL

[3] FJ — human-food maximum levels

Binds Pb. Strictest applicable human-food sovereign maximum for the nearest analog.

MAXIMUM LEVEL

[4] Gulf (GSO) — human-food maximum levels

Binds Cd. Strictest applicable human-food sovereign maximum for the nearest analog.

MAXIMUM LEVEL

[5] Hong Kong — human-food maximum levels

Binds Cr. Strictest applicable human-food sovereign maximum for the nearest analog.

MAXIMUM LEVEL

[6] Paraguay — human-food maximum levels

Binds tAs. 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/pet-food-fish-marine-protein>. 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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