

Injectable anabolic-androgenic steroids (AAS): HMTc Standard

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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 heavy-metal-safety standard for Injectable anabolic-androgenic steroids (AAS) (Peptides, SARMs, and Research Chemicals), evaluated on the finished product as sold. Every analyte is held to the ICH Q3D(R2) elemental-impurity limit for the parenteral route (the harmonized pharmaceutical standard, enforceable via USP <232>), measured on every lot by ICP-MS. Certification is heavy-metal safety only and does not endorse the efficacy or legality of these products.

1 | How every number on this standard is set

HMTc Method v2.0 — no-regulatory-anchor (control) form. Government-limit lookup returns nothing for this class, so cells resolve to control or a substantiated not_material; ICH Q3D / USP <232> route-appropriate PDEs are toxicological anchors only, never product-content limits.

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
Lead (Pb)	Tier 1	500	human-grade read-across (ICH)

Cadmium (Cd)	Tier 1	200	human-grade read-across (ICH)
Total arsenic (tAs)	Tier 2	1,500	human-grade read-across (ICH)
Inorganic arsenic (iAs)	Tier 1	≤ tAs	bounded by tAs (reflex speciation)
Mercury, total (tHg)	Tier 1	300	human-grade read-across (ICH)
Methylmercury (MeHg)	Tier 1	≤ tHg	bounded by tHg (reflex speciation)
Nickel (Ni)	Tier 2	2,000	human-grade read-across (ICH)
Tin (Sn)	Tier 2	60,000	human-grade read-across (ICH)
Aluminium (Al)	Tier 2	25	human-grade read-across (US FDA)
Total chromium (Cr)	Tier 2	110,000	human-grade read-across (ICH)
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	ICH — human-food analog
Cadmium (Cd)	200	ICH — human-food analog
Total arsenic (tAs)	1,500	ICH — human-food analog
Inorganic arsenic (iAs)	≤ tAs	iAs carries no product-specific sovereign cell; it is a component of and bounded by its parent total tAs (iAs ≤ tAs), an enforceable ceiling via reflex speciation rather than an empty cell.
Mercury, total (tHg)	300	ICH — human-food analog

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)	2,000	ICH — human-food analog
Tin (Sn)	60,000	ICH — human-food analog
Aluminium (Al)	25	US FDA — human-food analog
Total chromium (Cr)	110,000	ICH — 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

Pendergrass, K. (2026). *Injectable anabolic-androgenic steroids (AAS): HMTc standard* (Standard No. 10.83138/hmtc.std.26.aas-injectable). Institute of Contaminant Standards.
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References

- [1] ICH — human-food maximum levels
Binds Pb, Cd, tAs, tHg, Ni, Sn, Cr. Strictest applicable human-food sovereign maximum for the nearest analog.
MAXIMUM LEVEL
- [2] US FDA — human-food maximum levels
Binds Al. 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

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.

PUBLICATION HISTORY

The works this reference draws on are listed in full in the references above and on the briefing page at <https://heavymetalcertified.com/standards/aas-injectable>. 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.

This revision 2026-09. The full dated record is maintained at <https://heavymetalcertified.com/standards/aas-injectable>.