Clothing (onesies, pajamas, outerwear): HMTc Standard

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CORRESPONDENCE

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KEYWORDS

heavy metals, food safety, dietary exposure

PUBLICATION HISTORY

This revision 2026-08.

Abstract

The Heavy Metal Tested & Certified heavy-metal-safety standard for clothing (onesies, pajamas, outerwear) in Infant and Child Durable Goods and Textiles (Ages 0-5), evaluated on extractable element content of the homogeneous textile material after the REACH Annex XVII entry 72 Appendix 12 extraction (mg/kg of homogeneous material) — an extraction basis, not a total-content or toy-migration basis. 4 of 11 panel analytes publish a numeric limit taken from the strictest applicable government maximum; the remainder are held under mandatory control or a substantiated not-material determination.

1 | How every number on this standard is set

HMTc Method v2.0 (government-limit-only): the strictest applicable maximum set by a credible sovereign government for this exact product form in the row's declared native basis; a disclosed read-across from the nearest applicable sovereign cell where the exact cell is unregulated; a substantiated not-material determination where the analyte is a species bounded by a published parent; and a control with a named reference method where neither a sovereign value nor a supportable read-across exists. Never occurrence-derived.

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)	1,000	government maximum level (European Union)

Cadmium (Cd)	1,000	government maximum level (European Union)
Total arsenic (tAs)	1,000	government maximum level (European Union)
Inorganic arsenic (iAs)	≤ tAs	bounded by tAs (reflex speciation)
Mercury, total (tHg)	1,900	read-across (European Union)
Methylmercury (MeHg)	≤ tHg	bounded by tHg (reflex speciation)
Nickel (Ni)	18,800	read-across (European Union)
Tin (Sn)	1,000,000	read-across (European Union)
Aluminium (Al)	560,000	read-across (European Union)
Total chromium (Cr)	control	measured every lot; no human-food maximum
Hexavalent chromium (Cr-VI)	1,000	government maximum level (European Union)

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 (European Union)
Cadmium (Cd)	1,000	government maximum level (European Union)
Total arsenic (tAs)	1,000	government maximum level (European Union)
Inorganic arsenic (iAs)	≤ tAs	bounded by tAs (reflex speciation)
Mercury, total (tHg)	1,900	read-across (European Union); toys (accessible toy material); pacifiers/soothers reached via the EN 1400 soother standard (excluded from the TSD itself, Annex I item 16); EN 71-3 test basis
Methylmercury (MeHg)	≤ tHg	bounded by tHg (reflex speciation)

Nickel (Ni)	18,800	read-across (European Union); toys (accessible toy material); pacifiers/soothers reached via the EN 1400 soother standard (excluded from the TSD itself, Annex I item 16); EN 71-3 test basis
Tin (Sn)	1,000,000	read-across (European Union); textile articles intended to come into contact with the skin, childcare articles, and other consumer articles in skin contact (diapers, gloves)
Aluminium (Al)	560,000	read-across (European Union); toys (accessible toy material); pacifiers/soothers reached via the EN 1400 soother standard (excluded from the TSD itself, Annex I item 16); EN 71-3 test basis
Total chromium (Cr)	control	No credible sovereign publishes a TOTAL-chromium value for infant and toddler clothing in this row's extraction basis. REACH Annex XVII entry 72 Appendix 12 regulates chromium(VI) specifically and not total chromium, which is the correct regulatory choice: total chromium in a textile is dominated by benign trivalent chromium from chrome-tanned leather trim, chromium(III) mordants and chromium-complex dyes, while the health-relevant species is Cr(VI), and that species carries a firm published 1 mg/kg extractable ceiling on this same row. The Australian coating-content value (60 mg/kg) and the ASTM F963 soluble value (60 mg/kg) sit in other bases. Publishing a total-chromium ceiling would add no protection over the published Cr(VI) ceiling and would misrepresent a benign total as a hazard measure, so total chromium is held as a screening control.
Hexavalent chromium (Cr-VI)	1,000	government maximum level (European Union)

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4 | Cite this standard

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References

[1] European Union
Binds Pb, Cd, tAs, tHg, Ni, Cr-VI, Sn, Al.
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 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/infant-clothing. 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/infant-clothing.