

# Balloons: HMTc Standard

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CITE AS

Pendergrass, K. (2026). Balloons: HMTc Standard (Standard No. 10.83138/hmtc.std.21.toys-balloons). Institute of Contaminant Standards. <https://doi.org/10.83138/hmtc.std.21.toys-balloons>

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KEYWORDS

heavy metals, food safety, dietary exposure

PUBLICATION HISTORY

This revision 2026-08.

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 balloons in Children's Toys, Arts, and Crafts, evaluated on element MIGRATION from scraped-off toy material (EN 71-3 Category III, mg/kg of material): a migration ceiling, not a total-content ceiling. 8 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 default; strictest applicable sovereign maximum in the row's native basis, disclosed read-across where the exact cell is unregulated; never occurrence-derived). Category 21 publishes on the element-migration basis only, pooling the EU, US and Mexican migration instruments, with each row pinned to the EN 71-3 material category or categories its scope actually spans.

### 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 | 23,000     | government maximum level |
| Cadmium (Cd) | Tier 1 | 17,000     | government maximum level |

|                             |        |             |                                    |
|-----------------------------|--------|-------------|------------------------------------|
| Total arsenic (tAs)         | Tier 2 | 25,000      | government maximum level           |
| Inorganic arsenic (iAs)     | Tier 1 | n/m         | not material in this matrix        |
| Mercury, total (tHg)        | Tier 1 | 60,000      | government maximum level           |
| Methylmercury (MeHg)        | Tier 1 | n/m         | not material in this matrix        |
| Nickel (Ni)                 | Tier 2 | 930,000     | government maximum level           |
| Tin (Sn)                    | Tier 2 | 180,000,000 | screening ceiling (European Union) |
| Aluminium (Al)              | Tier 2 | 28,130,000  | government maximum level           |
| Total chromium (Cr)         | Tier 2 | 60,000      | screening ceiling (US FDA)         |
| Hexavalent chromium (Cr-VI) | Tier 2 | 53          | government maximum level           |

### 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)           | 23,000 | government maximum level         |
| Cadmium (Cd)        | 17,000 | government maximum level         |
| Total arsenic (tAs) | 25,000 | government maximum level         |

|                             |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inorganic arsenic (iAs)     | n/m         | No sovereign toy-safety instrument sets an inorganic-arsenic limit. Directive 2009/48/EC Annex II Part III point 13, EN 71-3, ISO 8124-3:2020 Table 1, ASTM F963-17 4.3.5 and NOM-252-SSA1-2011 Table 1 all regulate TOTAL arsenic migration from toy material; inorganic arsenic is a dietary speciation with no article-migration counterpart. Arsenic in a latex, polychloroprene or metallised-film balloon wall and its printing is bounded by the published total-arsenic migration ceiling by identity (iAs <= tAs), so a separate inorganic-arsenic ceiling would add no control. |
| Mercury, total (tHg)        | 60,000      | government maximum level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Methylmercury (MeHg)        | n/m         | Methylmercury is produced by microbial methylation in aquatic systems and reaches humans by diet. a latex, polychloroprene or metallised-film balloon wall and its printing carries no methylation pathway and no dietary route, and no sovereign toy instrument sets a methylmercury limit: every toy mercury limit (2009/48/EC point 13, ASTM F963-17 4.3.5, ISO 8124-3:2020, NOM-252-SSA1-2011, Canada SOR/2011-17 and SOR/2016-193) is on total mercury. Any organomercury fraction is bounded by the published total-mercury migration ceiling by identity (MeHg <= tHg).            |
| Nickel (Ni)                 | 930,000     | government maximum level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Tin (Sn)                    | 180,000,000 | government maximum level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Aluminium (Al)              | 28,130,000  | government maximum level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Total chromium (Cr)         | 60,000      | government maximum level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Hexavalent chromium (Cr-VI) | 53          | government maximum level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

#### 4 | Cite this standard

Pendergrass, K. (2026). *Balloons: HMTc standard* (Standard No. 10.83138/hmtc.std.21.toys-balloons). Institute of Contaminant Standards. <https://doi.org/10.83138/hmtc.std.21.toys-balloons>

#### 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/toys-balloons>. 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.

#### PUBLICATION HISTORY

This revision 2026-08. The full dated record is maintained at <https://heavymetalcertified.com/standards/toys-balloons>.