Fruit snacks: HMTc Standard

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CORRESPONDENCE

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KEYWORDS

heavy metals, food safety, dietary exposure

PUBLICATION HISTORY

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Abstract

The Heavy Metal Tested & Certified heavy-metal-safety standard for fruit snacks in Fruits, Vegetables, and Produce, evaluated on manufactured fruit snack as offered to the consumer, as-sold basis across a wide moisture range (roughly 15 percent for a fruit leather to 80 percent for a puree pouch). 5 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 sovereign maximum level for the row's product form in the row's native basis, a disclosed read-across where the exact cell is unregulated, a substantiated not-material determination, or a control; 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)	100	government maximum level (Israel)
Cadmium (Cd)	50	government maximum level (Israel)
Total arsenic (tAs)	300	government maximum level (Mercosur)

Inorganic arsenic (iAs)	60	government maximum level (Israel)
Mercury, total (tHg)	30	government maximum level (Israel)
Methylmercury (MeHg)	control	measured every lot; no human-food maximum
Nickel (Ni)	control	measured every lot; no human-food maximum
Tin (Sn)	control	measured every lot; no human-food maximum
Aluminium (Al)	control	measured every lot; no human-food maximum
Total chromium (Cr)	control	measured every lot; no human-food maximum
Hexavalent chromium (Cr-VI)	control	measured every lot; no human-food maximum

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)	100	government maximum level (Israel)
Cadmium (Cd)	50	government maximum level (Israel)
Total arsenic (tAs)	300	government maximum level (Mercosur)
Inorganic arsenic (iAs)	60	government maximum level (Israel)
Mercury, total (tHg)	30	government maximum level (Israel)

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Methylmercury (MeHg)	control	No credible sovereign government sets a methylmercury maximum level for this product form, and no not-material determination is supportable for it: the routed corpus quantifies methylmercury in edible plant and fungal tissue (wang2021-houttuynia--mercury-china measured methylmercury in the leaf and root tissue of an edible leafy vegetable at an LOD of 0.002 ug/kg; stasinos2014-heavy--metals-tubers-review in root and tuber tissue; asensio2023--madrid-mushrooms-mercury), so the species is not absent from produce and the biological premise of a not-material determination is rebutted inside this very category. This row is a manufactured derivative of the fresh commodity, whose own methylmercury cell is held under the same control; a manufactured derivative is never granted a weaker determination than the fresh row it derives from. Methylmercury is therefore held under mandatory analytical control rather than recorded not-material, and it remains bounded by identity below the published total-mercury ceiling for this row (Israel MOH FCS-2016 category 3, 30 ug/kg); methylmercury cannot exceed total mercury. No methylmercury ceiling is invented.
Nickel (Ni)	control	No credible sovereign government sets a nickel maximum level for fruit in any form or for manufactured fruit snacks. EU Reg. 2024/1987 enumerates vegetable, cereal, pulse, nut, seed, cocoa, seaweed and juice classes and writes no fruit maximum level, so there is no same-commodity value to read across from. HMTc publishes no nickel number for this row.

Tin (Sn)	control	Tin in this row is a packaging-migration analyte rather than a property of the food. Every sovereign tin maximum level in the register is conditioned on a canned (tinplate) presentation, and fruit snacks are a manufactured packaged form in which a hermetically sealed tinplate or metal-lined presentation cannot be excluded across the row (jams and compotes in particular are still packed in cans in some markets), while leathers, pouches, cups and gummies have no tinplate contact at all. Because the row's presentation determines whether any sovereign tin limit applies at all, HMTc publishes no standalone tin number for the row and instead makes the screen mandatory with an escalation to the canned-foods maximum level whenever the certified presentation is tinplate.
Aluminium (Al)	control	No credible sovereign government sets an aluminium contaminant maximum level for any fruit, vegetable or produce form in any jurisdiction. The register's aluminium limits are drinking-water and bottled-water parameters, infant-formula maximum levels, a food-contact plastics specific migration limit, toy migration limits, and permitted-additive levels for baked and starch foods; none of them regulates aluminium as a contaminant of produce. Aluminium is also the third most abundant element in the earth's crust and appears in produce largely as soil-derived and root-associated mineral content rather than as process contamination, so no near-neighbour read-across is supportable either. Under the government-limit-only method HMTc publishes no standalone aluminium number for this row.

Total chromium (Cr)	control	No credible sovereign government sets a total-chromium maximum level for this product form. The only dietary total-chromium maximum levels in the register are Hong Kong Cap. 132V item 7 for vegetables (500 ug/kg) and pulses, cereals, meat, fish and dairy powder rows under the same item, plus drinking-water and color-additive specifications. The Hong Kong vegetable row does not reach fruit or manufactured fruit snacks, and no jurisdiction writes a total-chromium maximum level for either. Under the government--limit-only method HMTc publishes no standalone total-chromium number for this row; total chromium is screened on every lot and hexavalent chromium is controlled by reflex speciation.
Hexavalent chromium (Cr-VI)	control	No credible sovereign government sets a hexavalent-chromium maximum level for any solid food in any jurisdiction: the register's only ingested Cr(VI) parameters are drinking-water maxima (Australia NHMRC 2025, 50 ug/L; California SWRCB, 10 ug/L), which are water-basis parameters that do not reach a solid produce row and whose issuers are not admitted to this category's credible set as food regulators, and every other Cr(VI) row in the register is an article or material limit. This row also has no published total-chromium parent to bound the species against: the only dietary total-chromium maximum level in the register from a regulator in this category's admitted credible set, Hong Kong Cap. 132V item 7, is scoped to vegetables and does not reach this product form (the register's remaining dietary total-chromium rows are Chinese GB 2762 milk and milk-powder rows, a different commodity from a regulator outside the admitted set). With neither a species limit nor a published parent, HMTc publishes no hexavalent-chromium number and controls the species by mandatory reflex speciation.

4 | Cite this standard

Pendergrass, K. (2026). *Fruit snacks: HMTc standard*. Institute of Contaminant Standards.

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References

[1] Israel
Binds Pb, Cd, tHg, iAs.
MAXIMUM LEVEL

[2] Mercosur
Binds tAs.
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/fruit-snacks. 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/fruit-snacks.