Why is antimony limited in baby wipes? The certification rationale

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HMTc limits antimony in baby wipes, a non-food product, because trivalent antimony is classified as probably carcinogenic to humans, screening surveys have found it in wipe materials and packaging, and a voluntary EU Ecolabel criterion sets a total-content ceiling, below 30 mg/kg, that can be measured directly on the finished wipe. No HMTc food standard limits antimony.

In brief

Antimony is limited in the baby wipes standard, and only there. It is not limited in any HMTc food standard, and nothing here should be read as a food limit. The case rests on three things. IARC classifies trivalent antimony, the class that includes antimony trioxide, as probably carcinogenic to humans (Group 2A); the human and animal cancer evidence comes from inhalation. Screening surveys have measured total antimony in baby-wipe components and packaging, and studies have detected antimony in the nonwoven sheets of wet wipes. And a government criterion already defines a ceiling that can be tested on the finished wipe: the EU Ecolabel for absorbent hygiene products, Commission Decision (EU) 2023/1809, Annex I criterion 7.3.8, prints Antimony < 30 mg/kg in the final product. That Ecolabel is voluntary, and the standard says so. Korea's limit for children's disposable diapers is the government precedent in baby products, but it is a migration limit, and migration and total content measure different things.

A limit on baby wipes, not on food

The other pages in this section explain why HMTc limits a metal in food. This one is different. Antimony is limited in one standard, baby wipes, which is a non-food product in Infant and Child Personal Care. No HMTc food standard, and no other product standard, carries an antimony limit, and this page does not imply one.

Version 2 of the baby wipes standard adds antimony as an additional pass/fail row, outside the eight-total panel that every HMTc standard carries. The limit is total antimony below 30 mg/kg in the finished product, entered on the standard as 30000 µg/kg with a strictly-less-than comparator. It is measured directly on the wipe. It does not use the impregnating-liquid basis of the standard's other analytes.

The health basis for limiting antimony

The assessment bodies treat antimony's two common forms as different hazards. In Monograph Volume 131 (2023), IARC classified trivalent antimony as probably carcinogenic to humans (Group 2A) and pentavalent antimony as not classifiable (Group 3). Antimony trioxide, which had been evaluated as Group 2B in 1989, is a trivalent compound and sits inside the 2023 class. The Group 2A evaluation rests on limited evidence in humans from smelter cohorts, where arsenic confounding was not ruled out, sufficient evidence in experimental animals for antimony(III) oxide, and strong mechanistic evidence in human primary cells. The animal evidence comes largely from the National Toxicology Program's two-year inhalation bioassay of antimony trioxide (Technical Report 590, https://doi.org/10.22427/ntp-tr-590), and NTP's Report on Carcinogens monograph (https://doi.org/10.22427/roc-mgraph-13) recommends listing antimony trioxide as reasonably anticipated to be a human carcinogen.

Stating the route matters. The human and animal cancer evidence comes from inhalation. WHO states that there are no data to indicate carcinogenicity by the oral route, and ATSDR notes no tumor increase in lifetime oral studies of antimony potassium tartrate. For oral intake the reference values differ: WHO's tolerable daily intake is 6 µg/kg body weight per day, and ATSDR's intermediate oral minimal risk level is 0.0006 mg Sb/kg/day, set from the same rat study with a lower no-effect level. Neither is a dermal value, and neither is a wipe limit. The full agency-by-agency assessment is on the antimony analyte reference.

Where antimony shows up in wipes

The measurements come from screens and surveys, not from a random sample of the market. Washington State Department of Ecology Publication 14-04-014 (revised June 2021) measured total elemental antimony at 70.6, 61.3, and 40.6 ppm in three baby-wipe components and 95.8 ppm in moist baby-wipes packaging, after prioritizing components by X-ray fluorescence. Choi, Song, and Kim 2016 (https://doi.org/10.12925/jkocs.2016.33.1.195) detected antimony in 12 of 24 wet-wipe nonwovens, reported as digest concentrations in µg/L; the paper prints no sheet concentration in mg/kg. A monitoring report from the China Association for Quality Promotion of Consumer Products Safety, dated 2 April 2026, detected total antimony in 20 of 21 baby wet wipes bought online, again in µg/L.

The pathway the Heavy Metal Index names for wipes is catalyst residue from the manufacture of polyester and PET. For wipes that is a hypothesis, not a finding: in the Choi study the highest sheet was labeled rayon only, and several polyester-labeled sheets had no detected antimony. How much antimony crosses infant skin from a wipe has not been measured in any study opened by the Heavy Metal Index, so the program claims no dermal dose. The complete record is on the Heavy Metal Index.

Why a certification limit is warranted

The sources behind this page identify no government maximum level for antimony in baby wipes. The HMTc anchor is the EU Ecolabel for absorbent hygiene products. Commission Decision (EU) 2023/1809, Annex I criterion 7.3.8, applies to impurities in the final product: the listed chemicals shall not be present in the final product in a concentration higher than Table 9, and Table 9 prints Antimony < 30 mg/kg. The Ecolabel is voluntary. It is a label criterion, not a market ban, and the baby wipes standard discloses it as a voluntary anchor. Because the criterion is a total-content value for the finished product, it can be tested directly on a wipe.

Korea MFDS Notice No. 2026-23, revised 24 March 2026 and first enacted as Notice No. 2018-19 on 21 March 2018, is the government precedent in baby products. It covers children's disposable diapers only, and sets antimony at 60 mg/kg or less by migration, applied separately to the inner lining and the waterproof layer. Migration and total content measure different things, so the Korean figure is precedent, not the wipe ceiling. The certification limit takes the Ecolabel's total-content ceiling and applies it to the finished wipe, a product used repeatedly on infant skin, where it is verified by testing the product itself. The regulatory hard-stop still applies, so a product that violates an actual legal limit cannot be certified regardless of HMTc status. How the limit is set is described under how limits are derived.

Frequently asked questions

▼ Does HMTc limit antimony in food?
No. Antimony is limited in one HMTc standard, baby wipes, which is a non-food product. No HMTc food standard, and no other product standard, carries an antimony limit.

▼ What is the HMTc antimony limit for baby wipes?
Total antimony below 30 mg/kg in the finished product, entered on the standard as 30000 µg/kg with a strictly-less-than comparator. It is measured directly on the wipe and is included in pass/fail.

▼ Is the EU limit on antimony mandatory?
No. The basis is the EU Ecolabel for absorbent hygiene products, Commission Decision (EU) 2023/1809, Annex I criterion 7.3.8. The Ecolabel is voluntary, a label criterion rather than a market ban, and the baby wipes standard discloses it as a voluntary anchor.

▼ How does the Korean diaper limit compare?
Korea MFDS Notice No. 2026-23 covers children's disposable diapers only. It sets antimony at 60 mg/kg or less by migration, applied separately to the inner lining and the waterproof layer. Migration and total content measure different things, so the Korean figure is government precedent, not the wipe ceiling.

▼ Is antimony a carcinogen?
IARC classifies trivalent antimony, which includes antimony trioxide, as probably carcinogenic to humans (Group 2A), and pentavalent antimony as not classifiable (Group 3). The human and animal cancer evidence comes from inhalation. WHO states that there are no data to indicate carcinogenicity by the oral route, and no study opened by the Heavy Metal Index measures how much antimony crosses the skin from a wipe.

Evidence and sources

This page synthesises three surfaces that carry the underlying evidence, and links to them rather than re-hosting them:

The government and expert-body assessments, agency by agency, with the toxicological reference points: the Antimony analyte reference	REFERENCE
The certification limits in force, and the Method v2.0 derivation behind each: the HMTc standards register	STANDARD

The complete peer-reviewed and regulatory literature and the occurrence corpus: Antimony on the Heavy Metal Index

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The Heavy Metal Index is an independent literature reference; this certification site cites it one way and applies its evidence to the certification question. The Index never cites back: that is what keeps it a disinterested source.

Cite this page

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