

Deriving a health-based guidance value for antimony to support development of UK Drinking Water Standards

References- Deriving a health-based guidance value for antimony to support development of UK Drinking Water Standards

In this guide

[In this guide](#)

1. [Introduction and Background](#)
2. [Properties of antimony](#)
3. [Toxicokinetics and Toxicity](#)
4. [Summary of the Poon et al. \(1998\) study](#)
5. [Lynch et al. \(1999\) interpretation](#)
6. [Response from Valli et al. \(2000\)](#)
7. [HBGV's established by the WHO, ATSDR and Health Canada](#)
8. [Agency for Toxic Substances and Disease Registry \(ATSDR\)](#)
9. [Health Canada](#)
10. [Differences between WHO, ATSDR and Health Canada](#)
11. [Additional Toxicology Studies](#)
12. [Summary and Questions for the Committee](#)
13. [List of abbreviations and their full meanings](#)
14. [References- Deriving a health-based guidance value for antimony to support development of UK Drinking Water Standards](#)

References

Agency for Toxic Substances and Disease Registry (ATSDR) (2019) Toxicological profile for antimony. U.S. Department of Health and Human Services, Public Health Service, Atlanta, GA. [ATSDR Antimony Tox Profile \(cdc.gov\)](#)

Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT) (2017) Statement on the results of the 2014 survey of metals and other elements in infant foods. [2014infantmetallssurveystatement.pdf \(food.gov.uk\)](#)

Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT) (2006) Statement on the results of the 2006 UK Total Diet Study of metals and other elements. [\[ARCHIVED CONTENT\] COT statement on the 2006 UK total diet study of metals and other elements | Food Standards Agency \(nationalarchives.gov.uk\)](#)

ECHA: REACH registration dossier submitted to ECHA. [Startpagina - ECHA \(europa.eu\)](#)

Elinder CG and Friberg L, "Antimony," In: L. Friberg, G. F. Nordberg, V. B. Vouk, Eds., Handbook on the Toxicology of Metals, Vol. II, Specific Metals, Elsevier, Amsterdam, 1986, pp. 26-42.

Goodwin, Page JE. 1943. A study of the extraction of organic antimonials using a polarographic procedure. Biochem J 37:198-209. <https://doi.org/10.1042/bj0370198>

Health Canada (2021) Antimony: Environmental and health assessment. Health Canada, Ottawa. [Guidelines for Canadian Drinking Water Quality: Guideline Technical Document - Antimony - Canada.ca](#)

Hext PM, Pinto PJ, Rimmel BA. 1999. Subchronic feeding study of antimony trioxide in rats. J Appl Toxicol 19(3):205-209. [Subchronic feeding study of antimony trioxide in rats - Hext - 1999 - Journal of Applied Toxicology - Wiley Online Library](#)

Hiraoka, N., 1986. The toxicity and organ-distribution of antimony after. [The toxicity and organ distribution of antimony after chronic administration to rats \(eurekamag.com\)](#)

ICRP. 1981. Metabolic data for antimony. Limits for intakes of radionuclides by workers (ICRP Publication 30, Part 3). International Commission on Radiological Protection. Ann ICRP 6(2/3):46-49.

Kanisawa, M. and Schroeder, H.A., 1969. Life term studies on the effect of trace elements on spontaneous tumors in mice and rats. Cancer Research, 29(4), pp.892-895. [Life term studies on the effect of trace elements on spontaneous](#)

[tumors in mice and rats - PubMed \(nih.gov\)](#)

Lynch, B.S., Capen, C.C., Nestmann, E.R., Veenstra, G. and Deyo, J.A., 1999. Review of subchronic/chronic toxicity of antimony potassium tartrate. *Regulatory Toxicology and Pharmacology*, 30(1), pp.9-17. [Review of Subchronic/Chronic Toxicity of Antimony Potassium Tartrate - ScienceDirect](#)

Miranda, E.S., Miekeley, N., De-Carvalho, R.R. and Paumgarten, F.J. (2006). Developmental toxicity of meglumine antimoniate and transplacental transfer of antimony in the rat. *Reprod. Toxicol.*, 21(3): 292-300. [Developmental toxicity of meglumine antimoniate and transplacental transfer of antimony in the rat - ScienceDirect](#)

NTP (2018). Report on carcinogens. National Toxicology Program. National Institute of Environmental Health Sciences. U.S. Department of Health and Human Services, Monograph on Antimony Trioxide.

NTP. 1992. NTP report on the toxicity studies of antimony potassium tartrate in F344/N rats and B6C3F1 mice (drinking water and intraperitoneal injection studies). Research Triangle Park, NC: NTP Tox 11. NIH Publication No. 92-3130.

Omura M, Tanaka A, Hirata M, et al. 2002. Testicular toxicity evaluation of two antimony compounds, antimony trioxide and antimony potassium tartrate, in rats and mice. *Environ Health Prev Med* 7(1):15-18. <http://doi.org/10.1007/bf02898061>

Poon, R., Chu, I., Lecavalier, P., Valli, V.E., Foster, W., Gupta, S. and Thomas, B., 1998. Effects of antimony on rats following 90-day exposure via drinking water. *Food and Chemical Toxicology*, 36(1), pp.21-35. [Effects of antimony on rats following 90-day exposure via drinking water - ScienceDirect](#)

Rossi, F., Acampora, R., Vacca, C., Maione, S., Matera, M.G., Servodio, R. and Marmo, E., 1987. Prenatal and postnatal antimony exposure in rats: effect on vasomotor reactivity development of pups. *Teratogenesis, carcinogenesis and mutagenesis*, 7(5), pp.491-496. [Prenatal and postnatal antimony exposure in rats: Effect on vasomotor reactivity development of pups - Rossi - 1987 - Teratogenesis, Carcinogenesis, and Mutagenesis - Wiley Online Library](#)

Schroeder, H.A., Mitchener, M. and Nason, A.P., 1970. Zirconium, niobium, antimony, vanadium and lead in rats: life term studies. *The Journal of nutrition*, 100(1), pp.59-68. [Zirconium, niobium, antimony, vanadium and lead in rats: life term studies - PubMed \(nih.gov\)](#)

Sunagawa, S., 1981. Experimental studies on antimony poisoning (author's transl). Igaku kenkyu. Acta Medica, 51(3), pp.129-142. [\[Experimental studies on antimony poisoning \(author's transl\)\] - PubMed \(nih.gov\)](#)

Sundar, Shyam and Jaya Chakravarty. "Antimony toxicity." International journal of environmental research and public health vol. 7,12 (2010): 4267-77. doi:10.3390/ijerph7124267. [Antimony Toxicity - PMC \(nih.gov\)](#)

Valli, V.E., Poon, R., Chu, I., Gupta, S. and Thomas, B.H., 2000. Subchronic/chronic toxicity of antimony potassium tartrate. Regulatory Toxicology and Pharmacology: RTP, 32(3), pp.337-8. [Subchronic/chronic toxicity of antimony potassium tartrate. - Abstract - Europe PMC](#)

WHO (2003) Antimony in drinking-water: Background document for development of WHO Guidelines for Drinking-water Quality. World Health Organization, Geneva. [Microsoft Word - Third Edition Antimony.doc \(who.int\)](#)