Chromium-6

(also called Hexavalent Chromium, Chromium VI, Chrome 6, Cr6)

- Legal Limit in California (Maximum Contaminant Level, MCL): Currently under review.[a]
  - The California MCL for total chromium (which includes chromium-6) is 50 µg/L.
- Public Health Goal (PHG) in California: 0.02 µg/L.[b]

Common sources of the contaminant in the Central Valley and Central Coast[c]

Chromium-6 occurs naturally in the environment from the erosion of natural chromium deposits. It has also been used historically in the chrome plating of metals, as an ingredient in dyes and pigments, in the leather tanning process, and as a wood preservative. Chromium-6 enters drinking water sources through leakage, poor storage, or inadequate industrial waste disposal practices of chromium-containing materials.

Possible health impacts of long-term exposure in drinking water[d]

- Stomach and gastrointestinal cancer
- Reproductive effects
- Damage to the liver and kidneys

Sensitive populations[d]

Fetuses, infants, and children have higher sensitivity to carcinogenic chemicals. In addition, people with less acidic stomachs are at greater risk of toxic effects.

Pathways of exposure in drinking water[d]

Ingestion is the most significant route of exposure to chromium-6 in drinking water. Strong data links the ingestion of chromium-6 to severe health impacts.

Tips for reducing exposure at home

Buy bottled water or purchase a treatment device certified to remove chromium-6. Under-the-sink units typically range in cost from $170 to $500. Water filtering pitchers, such as Brita filters, do not remove chromium. A full list of certified treatment devices is available at https://www.waterboards.ca.gov/drinking_water/certlic/device/watertreatmentdevices.html or by calling the State Water Board at (916) 323-0372. If you install a treatment device, it will be important to ensure that it is certified for hexavalent chromium and any other contaminants found in your water, that it is operated and maintained properly, and that it is monitored regularly.

Chromium-6 References

a. On May 31, 2017, the Superior Court of Sacramento County ordered the SWRCB to review, and revise, the MCL for chromium-6. According to the Superior Court, the California Department of Public Health had not "properly considered" the economic feasibility of the MCL of 10 µg/L when it was established in 2014. In its judgment, the Court made no indication that the MCL was too high, misaligned with public health standards, or economically infeasible. As of August 2021 there is still no official California MCL. This does not mean that chromium-6 is not dangerous to human health. For further reading, see: SWB (website), "Chromium-6 Drinking Water MCL," available at https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Chromium6.html (last visited August 2021)

b. The Public Health Goal (PHG) is the level at which a contaminant is considered safe if ingested at that level continuously throughout life, as determined by California's Office of Environmental Health Hazard Assessment (OEHHA). These levels are based solely on protecting public health, without taking into account cost or the technology available to achieve that standard. PHGs are not enforceable. For further reading, see: OEHHA (2011), "Final Technical Support Document on Public Health Goal for Hexavalent Chromium in Drinking Water," available at https://oehha.ca.gov/water/public-health-goal-fact-sheet/final-technical-support-document-public-health-goal-hexavalent (last visited August 2021). OEHHA (website), "Public Health Goals (PHGs)," available at https://oehha.ca.gov/water/public-health-goals-phgs (last visited August 2021).

c. SWRCB (2017), "Groundwater Information Sheet: Hexavalent Chromium," available at https://www.waterboards.ca.gov/gama/docs/coc_hexchromcr6.pdf (last visited August 2021).

d. OEHHA (2011), "Final Technical Support Document on Public Health Goal for Hexavalent Chromium in Drinking Water," available at https://oehha.ca.gov/water/public-health-goal-fact-sheet/final-technical-support-document-public-health-goal-hexavalent (last visited August 2021).