



Chromium VI

- Legal Limit in California (the Maximum Contaminant Level, or MCL^a): Currently under review.^b
- Legal Limit in the United States: No Federal MCL currently exists for Chromium VI. The US EPA MCL for total chromium (which includes chromium-VI) is 0.1 mg/L^c
- Public Health Goal (PHG^d) in California: 0.02 µg/L^e

Common sources of the contaminant in the Central Valley

Chromium VI 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.^f Chromium VI enters drinking water sources through leakage, poor storage, or inadequate industrial waste disposal practices of chromium-containing materials.^{g,h}

Possible health effects of short-term exposure^{i,j,k}

- Intestinal pain, nausea, vomiting, diarrhea
- Allergic skin reaction
- Eye and respiratory irritation
- Asthma attack

Possible health effects of long-term exposure^{l,m,n}

- Lung, stomach, and gastrointestinal cancer
- Reproductive effects
- Damage or failure of the liver and kidneys
- Nasal ulcers

Sensitive populations^{o,p,q}

Communities near chromium waste disposal sites or chromium manufacturing and processing plants, as well as workers exposed to chromium-containing materials, are particularly at risk. 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^p

Exposure to Chromium VI occurs through breathing, ingestion, and contact with the skin. Although most of the known health impacts are related to inhalation, strong data links the ingestion of Chromium VI – as occurs when one drinks water contaminated by Chromium VI – to severe health impacts.

Tips for reducing exposure at home

- Buy bottled water or purchase a reverse osmosis water filter. Under-the-sink units typically range from \$170 - \$500. Water filter pitchers, such as Brita filters, do not remove chromium.
- The Environmental Working Group has a guide for finding the right water filter at <http://www.ewg.org/research/ewgs-water-filter-buying-guide>. We recommend searching for "reverse osmosis" under "filter technology" AND "Chromium (Hexavalent)" under "certified to reduce."

Chromium VI References

^a The Maximum Contaminant Level (MCL) is the highest level of a contaminant allowed in drinking water, as set by the federal Environmental Protection Agency (EPA) and the California State Water Resources Control Board (SWRCB).

^b On May 31, 2017, the Superior Court of Sacramento County ordered the SWRCB to review, and revise, the MCL for Chromium IV. According to the Superior Court, the SWRCB had not “properly considered” the economic feasibility of the MCL of 0.010 mg/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. For further reading, see: http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Chromium6.shtml.

^c <http://water.epa.gov/drink/contaminants/#two>

^d 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 only goals and are not enforceable.

^e http://www.oehha.ca.gov/public_info/facts/Cr6facts072711.html

^f http://cfpub.epa.gov/ncea/iris_drafts/recordisplay.cfm?deid=221433

^g <http://water.epa.gov/drink/contaminants/basicinformation/chromium.cfm>

^h <http://cleanwateraction.org/page/hexavalent-chromium>

ⁱ <http://water.epa.gov/drink/contaminants/basicinformation/chromium.cfm>

^j <http://cleanwateraction.org/page/hexavalent-chromium>

^k <http://www.atsdr.cdc.gov/csem/csem.asp?csem=10&po=11>

^l *ibid*

^m http://oehha.ca.gov/public_info/facts/Cr6facts072711.html

ⁿ <http://cleanwateraction.org/page/hexavalent-chromium>

^o <http://www.ewg.org/research/chromium6-in-tap-water/faq>

^p <http://cleanwateraction.org/page/hexavalent-chromium>

^q <http://www.epa.gov/ttnatw01/hlthef/chromium.html>