Drinking Water and Chromium

Information about chromium

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1. What is chromium?

Chromium is an odorless and tasteless metallic element. Chromium is found naturally in rocks, plants, soil and volcanic dust, and animals.

The most common forms of chromium that occur in natural waters in the environment are:

- Trivalent chromium (chromium-3)
- Hexavalent chromium (chromium-6)

Chromium-3 is an essential human dietary element. It is found in many vegetables, fruits, meats, grains, and yeast. Chromium-6 occurs naturally in the environment from the erosion of natural chromium deposits. It can also be produced by industrial processes. There are demonstrated instances of chromium being released to the environment by leakage, poor storage, or inadequate industrial waste disposal practices.

The term total chromium refers to all forms of chromium including chromium-6.

Source: https://www.epa.gov/dwstandardsregulations/chromium-drinking-water

2. What are the WMWA chromium test results?

The WMWA 2016 Consumer Confidence Report reports the total chromium result as 2.49 ppb (parts per billion). The range (lowest and highest result) is listed as “NA” (not applicable) because there was only one sample required therefore there is no range listed. The MCL (maximum contaminant level) and the MCLG (maximum contaminant level goal) are both 100 ppb as established by the Environmental Protection Agency (EPA).

3. What do the chromium drinking water standards mean?

The current federal drinking water standard for total chromium is 100 ppb. To understand what the 100 ppb standard represents, you need to understand the terms MCLG and MCL. The MCLG is the level of contaminant in drinking water at which EPA has determined that no adverse health effects are likely to occur including a margin of safety and is based on exposure over a lifetime. The MCL is
set by EPA and is an enforceable standard based on best available science and is the maximum permissible level of a contaminant in water which is delivered to a user of a public water system. For total chromium, both the MCL and the MCLG were established by EPA in 1991 as 100 ppb. The 100 ppb for total chromium includes all forms of chromium, including chromium-6. There is no separate standard for chromium-6. Chromium-6 and chromium-3 are both covered under the total chromium standard because these forms of chromium can convert back and forth in water and in the human body. Measuring just one form may not capture all the chromium that is present. In order to ensure that the greatest potential risk is addressed, when EPA set upper limits for the MCL and MCLG they assumed that a measurement of total chromium is 100 percent chromium-6.

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4. Is total chromium or chromium-6 in drinking water a health concern?

The 100 ppb MCL for total chromium was established in 1991 and is based on the best available science at the time which indicated that continued exposure to chromium-6 could result in allergic dermatitis (skin reactions). EPA is now reviewing data from a 2008 long-term animal study by the Department of Health and Human Service’s National Toxicology Program. When the review is completed, EPA will consider this and other information to determine whether the drinking maximum concentration for total chromium needs to be revised. Prior to EPA making any decisions about revising the chromium drinking water regulation, EPA must issue its final human health assessment for chromium-6. EPA will carefully review the final assessment and consider all other relevant information to determine if a new drinking water regulation for chromium-6 or a revision to the current total chromium maximum concentration is warranted.

Source: https://www.epa.gov/dwstandardsregulations/chromium-drinking-water

5. Where can I find additional information from reliable sources?

Links:

Environmental Protection Agency

https://www.epa.gov/dwstandardsregulations/chromium-drinking-water


American Water Works Association
