

Chromium

Q: What is chromium?

Chromium occurs naturally in the environment as chrome iron ore, or chromite. It is widely distributed in soils and plants, but is rarely found naturally in water. Chromium in trace amounts in this form is important for human health. The United States Environmental Protection Agency (EPA) has determined that there is no evidence that a lifetime of exposure to low levels of chromium in drinking water has the potential to cause cancer. However, large doses of chromium are toxic.

Q: What is hexavalent chromium?

Chromium can also exist in a toxic state as hexavalent chromium, which is associated with industrial waste.

Q: How is chromium and hexavalent chromium detected in DMWW drinking water?

We monitor annually for total chromium under our permit requirements. DMWW has never detected any chromium, nor do we have any reason to believe there are any industrial facilities that might be disposing of chromium waste into either of our river sources. In addition, if a large spill should occur upstream, the lime softening treatment process used at DMWW would remove the chromium.

Q: What are the health effects associated with hexavalent chromium?

Hexavalent chromium exposure at acute levels can potentially cause skin irritation or ulceration. Long-term exposure to hexavalent chromium can lead to liver damage, kidney damage, and nerve tissue damage. The maximum contaminant level (MCL) for chromium is 100 parts per billion (ppb).

Q: How is chromium used in industry?

Chromium is used in metal alloys including stainless steel, protective coatings on metal, magnetic tapes and pigments for paints, cement, paper, rubber and other materials. It is also used as a component of wood preservatives and in photochemical processing and industrial water treatment. For medical purposes, chromium compounds are used in astringents and antiseptics. The chemical manufacturing industry and the combustion of natural gas, oil and coal are the largest sources of chromium omission in the atmosphere. The migration of chromium to groundwater, however, is unlikely.

Q: What is being done to eliminate hexavalent chromium contamination in our environment?

A: Hexavalent chromium has been successfully eliminated from entering the environment as a result of past and current National Pollution Discharge Elimination System (NPDES) industrial discharge limits.

For more information, call Des Moines Water Works at (515) 283-8700 or visit www.dmww.com.

For additional information, call the SAFE DRINKING WATER HOTLINE: 1-800-426-4791.