

## Health Effects of Chromium:

Chromium(VI) is known to cause various health effects. When it is a compound in leather products, it can cause allergic reactions, such as skin rash. After breathing it in chromium(VI) can cause nose irritations and nosebleeds.

Other health problems that are caused by chromium(VI) are:

- Skin rashes
- Upset stomachs and ulcers
- Respiratory problems
- Weakened immune systems
- Kidney and liver damage
- Alteration of genetic material
- Lung cancer
- Death

To read more of this article, click here:

<http://www.lenntech.com/periodic-chart-elements/cr-en.htm>

## How can chromium affect my health?

Breathing high levels of chromium(VI) can cause irritation to the lining of the nose, nose ulcers, runny nose, and breathing problems, such as asthma, cough, shortness of breath, or wheezing. The concentrations of chromium in air that can cause these effects may be different for different types of chromium compounds, with effects occurring at much lower concentrations for chromium(VI) compared to chromium(III).

The main health problems seen in animals following ingestion of chromium(VI) compounds are irritation and ulcers in the stomach and small intestine and anemia. Chromium(III) compounds are much less toxic and do not appear to cause these problems.

Sperm damage and damage to the male reproductive system have also been seen in laboratory animals exposed to chromium(VI).

Skin contact with certain chromium(VI) compounds can cause skin ulcers. Some people are extremely sensitive to chromium(VI) or chromium(III). Allergic reactions consisting of severe redness and swelling of the skin have been noted.

To read more: <http://www.atsdr.cdc.gov/tfacts7.html#bookmark05>

From The Agency for Toxic Substances & Disease Registry

## Chromium Compounds

## **Hazard Summary-Created in April 1992; Revised in January 2000**

Chromium occurs in the environment primarily in two valence states, trivalent chromium (Cr III) and hexavalent chromium (Cr VI). Exposure may occur from natural or industrial sources of chromium. Chromium III is much less toxic than chromium (VI). The respiratory tract is also the major target organ for chromium (III) toxicity, similar to chromium (VI). Chromium (III) is an essential element in humans. The body can detoxify some amount of chromium (VI) to chromium (III).

The respiratory tract is the major target organ for chromium (VI) toxicity, for acute (short-term) and chronic (long-term) inhalation exposures. Shortness of breath, coughing, and wheezing were reported from a case of acute exposure to chromium (VI), while perforations and ulcerations of the septum, bronchitis, decreased pulmonary function, pneumonia, and other respiratory effects have been noted from chronic exposure. Human studies have clearly established that inhaled chromium (VI) is a human carcinogen, resulting in an increased risk of lung cancer. Animal studies have shown chromium (VI) to cause lung tumors via inhalation exposure.

Source: Environmental Protection Agency

url: <http://www.epa.gov/ttn/atw/hlthef/chromium.html>

### **Chemicals of Concern: Chromium 6**

The film "Erin Brockovich" starring Julia Roberts drew widespread attention to Chromium-6. Also known as hexavalent chromium, chromium-6 is known to cause cancer and birth defects.

In contrast, the naturally occurring Chromium-3 is vital to human health. Chromium-3 is found in air, water, rocks, soil, and certain foods. As an essential trace mineral, humans require chromium in very small amounts. It is found in such foods as broccoli, cheese, meats, cereal, brewer's yeast, whole grains, and mushrooms.

In contrast to nutritional chromium, Chromium-6 can cause severe health side effects. Often referred to as industrial chromium, Chromium-6 chemically reacts differently to other molecules.

To read more about the hazards and environmental processes of Chromium 6, click here: [http://www.etc.org/technologicalandenvironmentalissues/chemicalsofconcern/chromium\\_6/](http://www.etc.org/technologicalandenvironmentalissues/chemicalsofconcern/chromium_6/)

Source: Hazardous Waste Resource Center, "Technology and Environmental Issues"