

Toolbox Talk

Hexavalent Chromium

1926.1126

What Is It?

Chromium is an essential element for humans because it helps our body use glucose from the food we eat. We safely consume about 1 milligram a day through foods like wheats and grains. Chromium is also used to harden steel, manufacture stainless steel, in batteries, preserve wood, and make pigments for paints, stains, and other brightly colored products.

Though elemental Chromium is found in the environment, its use in manufacturing changes the makeup to become the carcinogen Hexavalent Chromium (CrVI). This oxidized state of the element is the main concern to humans as it is highly toxic and found throughout a construction process.

Who is exposed to Hexavalent Chromium?

Known to target the respiratory system, kidneys, liver, skin, and eyes, exposure to Chromium comes from inhalation or ingestion.

Making fumes, gasses, or dust out of the products that contain Cr(VI) such as:

- Welding or other types of “hot work” on stainless steel
- Spraying paint, primer, and other coatings
- Grinding/Sanding/Blasting on chrome or other hardened alloy metals
- Sanding material painted with anticorrosive paints or coatings

Cr(VI) is caustic to the skin, meaning it burns the skin while a chemical reaction is taking place. Used in Portland Cement, when mixed with water starts the hardening process. The burning sensation can be stopped with the use of pH neutral or slightly acidic soap.

Proper PPE should be worn to minimize direct contact when:

- Working with wet cement
- Bricklaying (mortar)
- Tile Setting (thinsets and grouts)

How to Protect Yourself

You should always do an assessment of the materials and jobsite before starting any work.

- Engineering Controls - create a space with air flow that can move the fumes/gasses/dust away from yourself or others.
- Wear PPE like a respiratory, gloves, glasses, sleeves, and pants to prevent direct contact.
- Wash your hands before consuming food, and take your breaks away from the affected area.

If this is a common occurrence for your workplace, measuring and testing need to be done regularly. There are strict Permissible Exposure Limits in place at <https://www.osha.gov/chemicaldata/537>