



## Cadmium factsheet



### What is cadmium?

Cadmium is a soft, silver-white metal occurring naturally in the Earth's crust, where it is typically found as a mineral in combination with other elements.

### Occurrence of cadmium

Cadmium is the most abundant natural element that occurs in the Earth's crust as a mineral in combination with other elements. It is also present in small quantities in ambient air, water and soil (coal, minerals). Cadmium is frequently obtained as a by-product of zinc, lead or copper production. Around 83% of the cadmium produced is used in the manufacture of batteries, 8% in paint pigments and 7% in coatings and platings. Relatively high concentrations of cadmium in soil and water can be found in the vicinity of industrial zones or hazardous waste landfills. Fertilizers and pesticides may also contain cadmium.

### Toxicity

The organ primarily affected by chronic exposure to cadmium is the kidney. Excessive exposure is also associated with reduced bone density and cardiovascular effects. On the basis of animal and human studies, cadmium and cadmium compounds have been classified as carcinogenic.

### Potential sources of cadmium exposure

Another source of environmental cadmium exposure is active/passive smoking, as tobacco plants have a relatively high cadmium content. Cadmium compounds are fairly volatile and can be inhaled after being released through smoking. For non-smokers, the main source of cadmium is food – especially a high intake of fish, liver, kidneys or wild mushrooms. Dietary intake of cadmium is 10–20 µg/day. In non-smokers, this represents 95% of the total daily intake of cadmium. The total intake of cadmium is higher in smokers.

### Human biomonitoring of cadmium

Cadmium is regularly measured in blood and urine samples. Urine samples are used to determine long-term cadmium exposure, reflecting cumulative lifetime exposure. Blood cadmium measurements are used to determine recent exposures (up to 100 days). Measurable concentrations of cadmium in blood or urine are not necessarily an indication of adverse health effects.

### Risk management/measures to reduce cadmium exposure

Cadmium exposure can be reduced by avoiding smoking tobacco and passive smoking. It can also be reduced by the following measures: good occupational hygiene, avoidance of food and environments with high cadmium levels, and appropriate disposal of batteries and other products containing cadmium.