



## CADMIUM

### Fact Sheet

Heavy metals such as cadmium are present in nature and are not produced by man. However, it is mostly extracted from mines and used by industry and by individuals in everyday life. As use increases, the waste produced increases and levels of cadmium rise in the environment.

#### WHAT IS CADMIUM?

Cadmium is a natural element and one of four toxic metals that are of major environmental health concerns including Arsenic, Cadmium, Lead and Mercury.

Everyone is exposed to cadmium through the air they breathe, the water they drink and the food they eat.

#### SOURCES

Cadmium is toxic metal mostly produced from:

- ❖ Zinc and lead mining and smelting
- ❖ Burning coal
- ❖ Household wastes
- ❖ Waste disposal and spills or leaks at hazardous waste sites
- ❖ Sewage

From these sources, cadmium makes its way into the environment like most of the other contaminants. It travels long distances, falls into the soil and water, and then ends up in fish, plants, and other animals that we consume. It can

also bioaccumulate (see fact sheet on bioaccumulation and contaminants).

#### USES

It is used in:

- ❖ Metal coatings against corrosion.
- ❖ Plastics such as polyvinyl chloride (PVC)
- ❖ Pigments
- ❖ Nickel–cadmium batteries
- ❖ Fungicides for golf courses
- ❖ Control rods and shields for nuclear reactors
- ❖ Television picture tube phosphors
- ❖ Motor oils
- ❖ Curing agents for rubber

#### EXPOSURE

Humans are exposed to cadmium by:

- ❖ Breathing contaminated air
  - In the workplace (battery manufacturing, metal soldering or welding).
  - Near the burning of fossil fuels or municipal waste.



- From cigarette smoke (doubles the average daily intake).
- ❖ Eating foods containing it; low levels in all foods (highest in shellfish, liver, and kidney).
- ❖ Drinking contaminated water.

### HEALTH EFFECTS

#### IN HUMANS

Breathing high levels can cause:

#### Lung Damage

#### Death

Eating or drinking high levels can cause:

#### Stomach irritations

#### Vomiting

#### Diarrhea

Long-term exposure to lower levels (air, food, water) can cause:

#### Kidney damage

#### Lung damage

#### Fragile bones

#### Possible increase in risk of cancers

*The effects on children are still unclear.*

#### IN ANIMALS

From food or water containing cadmium, health effects can include:

#### High blood pressure

#### Iron-poor blood (anemia)

#### Liver disease

#### Nerve or brain damage

It is presently unknown whether humans can get some of the same diseases as animals from eating or drinking

cadmium. Also, skin contact with cadmium does not seem to cause health effects in humans or animals.

### PREVENTION

- ❖ Dispose of batteries correctly and keep them out of reach of children.
- ❖ Store substances that contain cadmium safely.
- ❖ If you are in contact with cadmium at work, use safety precautions for yourself and avoid carrying cadmium home on your clothing, skin, hair and tools.
- ❖ Eat a variety of foods to reduce the amount of cadmium from your food and drinks.
- ❖ Get your water tested for cadmium.

### FOR MORE INFORMATION

You can contact your local public health unit or contact:

Health Canada's Management of Toxic Substances Division  
Room 128, Building #8  
Tunney's Pasture  
Ottawa, ON K1A 0L2  
Telephone: (613) 957-3127

The information given has been adapted from the following sites and documents:

[Health Canada: Environmental and Workplace Health-Cadmium](#)  
[ATSDR- ToxFAQTM Cadmium](#)  
[Environmental Contaminants and Traditional Food Workshop Report](#)  
[Environmental Damage and Environmental Health](#)