

Molybdenum - ToxFAQs™



What is molybdenum?

Molybdenum is a metal found naturally in some minerals. It is commonly found in the environment in the form of molybdenum trioxide or molybdenum salts, such as sodium molybdate or ammonium molybdate.

Molybdenum is used in the production of cast iron and stainless steel. Molybdenum is also used in the production of biofuels, solar panels, catalysts, lubricants, and pigments.

How can I be exposed to molybdenum?

Because molybdenum is **found naturally in the environment**, you can be exposed to low levels of it every day, mostly in food. This exposure is at a very low level that does not cause harm. In fact, a small amount of this metal is needed by the body.

Higher levels of molybdenum may be found in the air near industries that process or release it and near mining and milling operations.

What happens when I eat or breathe molybdenum?

When you breathe in air containing molybdenum, molybdenum particles can get into your lungs. Some of these particles can be coughed up and swallowed. Small particles can go deeper into the lungs and are likely to pass through the lining of the lungs and enter the bloodstream.

Molybdenum in food and water can enter the blood after a few hours. The amount and the form of molybdenum in the food or water will affect how much molybdenum enters your blood.

How can molybdenum affect my health?

Molybdenum is an essential nutrient required to maintain health. Exposure to excess levels can result in harmful effects.

Copper is also an essential nutrient; however, the amount of copper in the diet can influence how molybdenum can affect the body. Copper levels that are too low can increase the harmful effects of molybdenum.

Studies in workers exposed to high levels of molybdenum for a long time show that breathing molybdenum dust can cause lung problems.

The levels of molybdenum normally found in the environment are lower than levels known to cause health problems.

Molybdenum

One way to learn about whether molybdenum will harm people is to do studies in lab animals. Most of these studies have **tested doses in animals that are higher than levels found in the environment**. Studies in lab animals breathing molybdenum trioxide found damage in the nasal cavity (inside of the nose). Kidney and liver damage and reproductive and developmental effects (decreases in growth) have been found in animals eating and swallowing higher than normal doses of molybdenum.

Can molybdenum cause cancer?

Lung cancer was found in some studies of mice that breathed high levels of molybdenum trioxide; **these levels are much higher than typically found in the environment**.

The International Agency for Research on Cancer considers molybdenum trioxide to be possibly carcinogenic (causing cancer) to humans.

Can I get a medical test to check for molybdenum?

Tests are available to measure molybdenum levels in the body. Molybdenum can be measured in the urine and blood for several days after exposure. However, these tests cannot tell you how much molybdenum you have been exposed to or predict if you will have any health problems. **Doctor's offices do not routinely offer these tests.**

How can I protect myself and my family from molybdenum?

If you live near a waste site contaminated with molybdenum, prevent children from eating or playing in the dirt.

For more information:

Call **CDC-INFO** at 1-800-232-4636, or submit your question online at <https://wwwn.cdc.gov/dcs/ContactUs/Form>

Go to ATSDR's Toxicological Profile for Molybdenum: <https://www.atsdr.cdc.gov/ToxProfiles/tp.asp?id=1482&tid=289>

Go to ATSDR's Toxic Substances Portal: <http://www.atsdr.cdc.gov/substances/index.asp>

Find & contact your ATSDR Regional Representative at http://www.atsdr.cdc.gov/DRO/dro_org.html

