Thallium - ToxFAQs™

What is thallium?

Thallium is a naturally occurring metal in the earth's crust. It is mainly found in the environment combined with other elements such as oxygen, sulfur, and chlorine. The primary sources of thallium release into the environment are coal burning and smelting and the production of cement. Thallium is used in superconductors, low-melting glass, photoelectric cells, and radiation detection equipment. In the past, thallium pesticides were used to control rodents and insects; this use was banned in 1972. U.S. production of thallium ended years ago.

What happens to thallium in the environment?

In the environment, thallium compounds can dissolve in water and can bind with soil and sediment. Thallium can also be found in aquatic plants and fish and can be absorbed by plants grown in contaminated soil. Thallium is quite stable in the environment and since it is an element, it cannot be transformed or broken down.

How can I be exposed to thallium?

You may be exposed to thallium by ingestion, inhalation, or dermal contact. You are most likely to be exposed to thallium from eating fruits and vegetables grown in soil that contains thallium. You may be exposed to higher levels of thallium if those fruits and vegetables were grown in thallium-contaminated soil or by breathing air near emission sources or in the workplaces that use thallium. You may also be exposed to thallium if you live near a hazardous waste site with contaminated groundwater.

How can thallium affect my health?

Hair loss, numbness and pain in the feet and hands, gastrointestinal effects (diarrhea, abdominal pain, nausea, and vomiting) and heart problems have been observed in humans poisoned with thallium. Laboratory animal studies show that ingesting thallium can cause hair loss, nerve damage, diarrhea, heart problems and death. Decreases in body weight have also been observed in animal pups.

The levels of thallium found in the environment are lower than levels known to cause adverse health effects.

Thallium

Can thallium cause cancer?

The U.S. Environmental Protection Agency (EPA) has concluded that the database for thallium provides inadequate information to assess carcinogenic potential.

The U.S. Department of Health and Human Services (DHHS) and the International Agency for Research on Cancer (IARC) have not assessed the carcinogenicity of thallium.

Can I get a medical test to check for thallium?

Thallium can be measured in urine, blood, and hair. Thallium levels in blood levels only reflect very recent exposures and are not considered a reliable way to monitor exposure. Elevated levels of thallium in urine or hair cannot predict whether you will have health problems from thallium. If you think you have been exposed to thallium, call your doctor, nurse, or poison control center.

How can I protect myself and my family from thallium?

If you work with thallium, use all safety precautions to avoid carrying thallium-containing dust home from work on your clothing, skin, hair, or tools. Most people do not need to take any special steps to avoid exposure to thallium in their daily lives. If you live near a source of thallium and grow fruits and vegetables, have the soil tested first to make sure it is not contaminated. If you live near a thallium source and have a private well, have your well tested for thallium and other metals. Keep children from playing in areas near hazardous waste sites or thallium sources to avoid contact with thallium.

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 Thallium: https://wwwn.cdc.gov/TSP/ToxProfiles/ToxProfiles.aspx?id=309&tid=49

Go to ATSDR's Toxic Substances Portal: https://wwwn.cdc.gov/TSP/index.aspx

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