

Thallium (Tl)



Thallium is a bluish-white soft and malleable post-transition metal, which belongs to the same group as tin and lead. Even though thallium is relatively rare, it is widely dispersed in the environment. As it is not as economically important as other metals, it is often discarded into the environment as a waste product of industrial processes and mining. Thallium is used in specialized electronic research equipment, semiconductors and lasers.

Tl

Thallium

[Xe] 4f¹⁴ 5d¹⁰ 6s² 6p¹

Atomic number
protons/electrons

81

Neutrons

(most common isotope)

124

Atomic weight

(amu)

205

Atomic radius

(pm)

145

Functions/Health effects:

Thallium is extremely harmful in all its forms. When ingested in higher doses, it causes vomiting, diarrhoea, hair loss and damage to nervous system, lungs, heart, kidneys, and liver. Chronic exposure, mainly from living in industrial areas, may result in problems such as anorexia, headaches, blindness and even death.

Sources:

Thallium occurs mainly in industrial wastewaters and as a result of burning fossil fuels and smelting iron. It is present in the air, water, soil, and food. The biggest exposure is from eating fruits and vegetables grown in the thallium polluted areas, since plants can easily absorb thallium from soil. With the growing industrial uses of thallium, the risk of its increased presence in the environment and our food supply is very real.

Did you know that?

Thallium used to be used as a rodenticide which has led to death of many wild animals as well as dogs. The use of thallium for such purposes is now banned in most countries.

Thallium was discovered back in 1861 by flame spectroscopy, in which it produces a green spectral line. Hence its name is derived from the Greek work thallós, meaning "green shoot".

Food
division

