THORIUM

Element symbol: Th
Atomic number: 90

Thorium is a naturally occurring, slightly radioactive metal, with the symbol Th and the atomic number 90. Thorium was formally discovered by Swedish chemist Jöns Jakob Berzelius, who isolated it from a new, black mineral sample 1828. The new mineral was found by T. Esmark on Løvøy Island in Norway, and a sample was given to Professor Jens Esmark, a noted mineralogist for identification. Professor Esmark was unsuccessful in his identification, so he subsequently forwarded a sample to Berzelius for examination in 1828. Berzulius named the new element after Thor, the Norse god of thunder. Thorium is relatively common in rocks, soils and various minerals; being as abundant as lead.

Thorium is part of magnesium alloys called Mag-Thor, which are used in aircraft engines, imparting high strength at elevated temperatures. The half-life of isotope thorium-232 is about 14.05 billion years.

Thorium can be used as fuel in a nuclear reactor. According to Australian science writer Tim Dean, “thorium promises what uranium never delivered: abundant, safe and clean energy”. With a thorium nuclear reactor, Dean stresses a number of benefits: there is no possibility of a meltdown, it generates power inexpensively, it does not produce weapons-grade by-products, and will burn up existing high-level waste as well as nuclear weapon stockpiles.

Provided by the element sponsor sponsor Amanda Lee

ARTISTS DESCRIPTION

The possibilities of thorium as a potential energy source are immensely exciting. The way a liquid fluoride thorium reactor is designed really inspired me, as well as the beauty of the electron configuration of the element itself.

BRITTANY GUY