

## WHAT IS A THORIUM REACTOR?

Thorium is a naturally-occurring, slightly radioactive metal discovered in 1828 by the Swedish chemist Jöns Jakob Berzelius, who named it after Thor, the Norse god of thunder. It is found in small amounts in most rocks and soils, where it is about three times more abundant than uranium. Soil contains an average of around 6 parts per million (ppm) of thorium. Thorium is very insoluble, which is why it is plentiful in sands but not in seawater, in contrast to uranium.

**-This inturn makes thorium one of the most abundant sources of nuclear energy out there.**

Thorium exists in nature in a single isotopic form – Th-232 – which decays very slowly (its half-life is about three times the age of the Earth). The decay chains of natural thorium and uranium give rise to minute traces of Th-228, Th-230 and Th-234, but the presence of these in mass terms is negligible. It decays eventually to lead-208.

<https://www.youtube.com/watch?v=ElulEJruhRQ>

Cite:<https://www.world-nuclear.org/information-library/current-and-future-generation/thorium.aspx>

## HOW DOES IT COMPARE TO A NUCLEAR REACTOR ?

Thorium Is cheaper and way safer than your typical nuclear reactor unlike uranium; the radioactive decay for the spent fuel is less than a couple of days for it to be safe. Not only does it not have dangerous fuel it's also one of the best recycling reactors out there. On top of that finding thorium is so easy, and there is so much that can be found, essentially every large body of sand has enough thorium in it to power the planet with clean energy for hundreds of thousands of years.

## HOW MANY ARE THERE AND ARE THEY USABLE?

-Unfortunately there have only been five used out of the seven different varieties made to burn thorium reactors, while thorium reactors are safer there not as widespread talked about in public, reason being they are relatively new.

Here are some of the thorium based Reactor Varieties

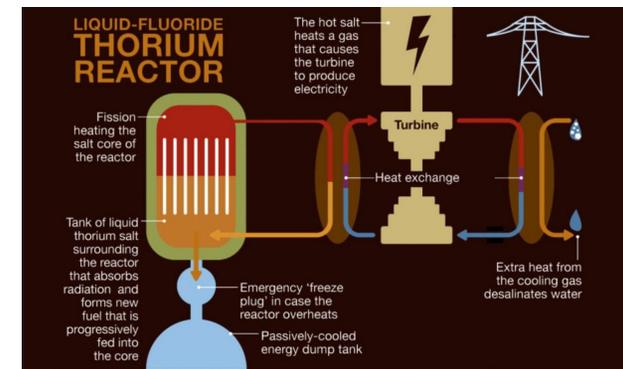
-Heavy water **reactors** (PHWRs)

- Advanced Heavy Water **Reactor** (AHWR)

- High-temperature gas-cooled **reactors** (HTRs)
- Boiling (light) water **reactors** (BWRs)
- Pressurized (light) water **reactors** (PWRs)
- Fast neutron **reactors** (FNRs)

## HOW EXACTLY DO I FIND OUT MORE ABOUT THORIUM REACTORS?

- There are many research sites to look up thorium reactors on the web. And this brochure has some many sites that you may want to visit after reading. They are posted in between and at the end of the Brochure/ Work cited page.



## WHAT ARE THE FUTURE OF THORIUM REACTORS?

-While they do sound like there something from sci-fi they lack the funding and research that many other reactor possesses, and while there not mainstream with news and media it's very possible that thorium reactors could go unheard of for the next fifty years.

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