

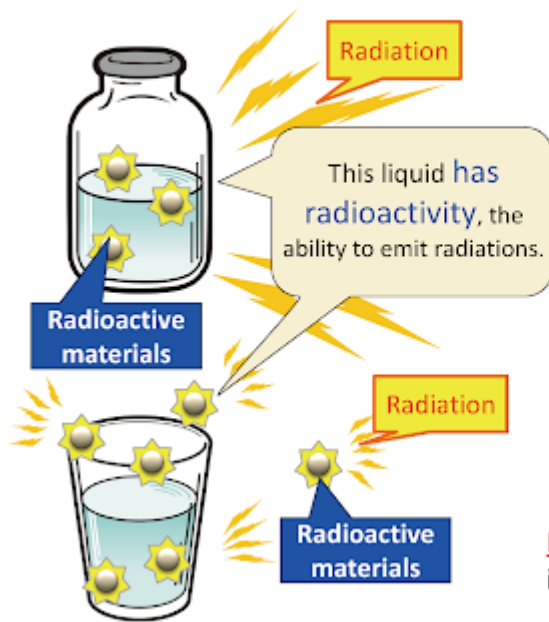
# Radioactive capsule found in Australia

February 2, 2023

**In news-** Authorities in Australia have recovered a tiny radioactive capsule, smaller than a coin, lost in Country's vast Outback.

## **About the capsule-**

- The Caesium-137 capsule lost in transit was discovered when a vehicle equipped with specialist detection equipment picked up the radiation, despite travelling at around 70 km/h.
- The **search team then used portable detection equipment to find the capsule**, which was located about 2 metres from the side of the road in a remote area far from any community.
- **The radioactive capsule was part of a gauge used to measure the density of iron ore feed from Rio Tinto's Gudai-Darri mine.**
- **Located in the northern reaches of Western Australia**, the recently opened mine is one of the most advanced in the world, with a high degree of automation.



Radioactive materials themselves emit radiation.

If radionuclides are incorporated into the body, they will be partly removed outside the body (excreted) or be transferred to particular organs/tissues.

Radiation itself does not remain in the body.

- The biggest danger was that the capsule would be picked up by some unsuspecting person.
- This would not only endanger the person but potentially endanger their community as they went around, presumably with the capsule in their pocket.
- **Radioactive materials like Caesium-137 produce beta and gamma radiation, both of which are harmful for humans.**
- When exposed to them, short term risks include that of radiation poisoning (which can be deadly) whereas in the **long term, it can also be a cause of cancer and damage human DNA.**
- Radionuclides (or radioactive materials) are a class of chemicals where the nucleus of the atom is unstable.
- They achieve stability through changes in the nucleus (spontaneous fission, emission of alpha particles, or conversion of neutrons to protons or the reverse).
- This process is called radioactive decay or transformation, and often is followed by the release of ionizing radiation (beta particles, neutrons, or gamma rays).