

Hazards and uses of radioactive emissions



NAILIT!

Radioactive isotopes can be alpha (α), beta (β) or gamma (γ) emitters. They emit this radiation to make their nuclei more stable. Half-lives can range from a fraction of a second to billions of years.

Lead-210 decays via beta decay to bismuth-210. It has a half-life of 22 years.

A sample is found that originally consisted completely of lead-210.

Now it exists with one lead-210 atom for every seven bismuth-210 atoms.

a How many half-lives have passed? (2 marks, ★★★★★)

.....

.....

b How old is the sample? (1 mark, ★★★)

.....