35.2: Introduction

Radioactive decay is the process of an atom changing into a different type of atom; it is a change in the number of protons. Half-life is the time it takes for one half of a sample of radioactive atoms to decay, so that half of the original number of atoms have decayed. Each radioactive isotope has its own half-life. The half-life of an isotope of carbon may be used to determine the age of a fossil. The amount of a radioactive isotope remaining in a sample indicates the approximate age of the sample.

Table 35.2.1: Radioactive Isotope and Half-life

Radioactive Isotope	Half-life
$^{239}_{94}\mathrm{Pu}$	24,400 years
$^{238}_{92}\mathrm{U}$	4.51 x 109 years
$^{214}_{84}\mathrm{Po}$	0.00016 seconds
$^{210}_{83}\mathrm{Bi}$	5 days
$^{210}_{82}\mathrm{Pb}$	20.4 years
$^{14}_{6}\mathrm{C}$	5,730 years

Contributors and Attributions

- Template:ContribCCPhySc101L