^{232}U

The first observation of ^{232}U was reported in 1949 by Gofman and Seaborg in "Production and properties of U^{232} and Pa^{232}" (1949Go01). A ^{232}Th target was bombarded with 14 MeV deuterons from the Berkeley 60-in. cyclotron producing ^{232}Pa in (d,2n) reactions. ^{232}U was then populated by subsequent β-decay. Beta- and gamma-rays were measured with a Lauritsen quartz-fiber electroscope and alpha-particles were measured in an ionization chamber following chemical separation. "Since U^{232} is too long-lived to permit following its decay readily, its half life can best be evaluated by using the measured value of the intensity of the β particles of the 1.6-day Pa^{232}, together with the corresponding measured value of the intensity of α particles from the daughter U^{232}... Since the electroscope was not calibrated for Pa^{232} radiation, a rough answer could be obtained by assuming that the efficiency of the electroscope is the same for Pa^{232} radiation as it is for Pa^{233} radiation, for which the electroscope had been calibrated in previous work. In this manner it was found that 0.12 millicurie of Pa^{232} β radioactivity decayed to 0.016 microcurie of U^{232} α activity. These data lead to a value of about thirty years for the half life of U^{232}."

Adapted from reference (2013Fr03)

1949Go01 J. W. Gofman and G. T. Seaborg, The Transuranium Elements: Research Papers, Book 2, Vol. 14B, paper 19. 14, G. T. Seaborg ed. , p. 1427 (1949).

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