

⁹⁴Nb

Sagane et al. described the discovery of ⁹⁴Nb in the 1938 paper “Neutron Induced Radioactivity in Columbium” (1938Sa03). Neutrons produced by bombarding beryllium with 3 MeV deuterons from the RIKEN cyclotron and slowed down with paraffin were used to irradiate niobium samples. Beta-ray activities were measured to identify the isotope which was produced by neutron capture on stable ⁹¹Nb. The half-life of ⁹²Nb was reported to be 7.5(5) m in a table. “The 7.5m period is in good agreement with Pool, Cork and Thornton.” The work by Pool et al. referred to by Sagane et al. reported a half-life of 7.3 m but was not able to make a unique mass assignment (1937Po04). This half-life corresponds to an isomer and its transition energy to the ⁹⁴Nb ground state was observed twelve years later by Caldwell (1950Ca10).

Adapted from reference (2012Ny02)

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