

¹²⁵Sn

Livingood and Seaborg reported in 1939 the observation of ¹²⁵Sn in the article “New Periods of Radioactive Tin” (1939Li04). 5 MeV deuterons bombarded tin targets at the Berkeley Radiation Laboratory and radioactive decay curves were recorded. “We have found in the tin precipitate, prepared by bombardment of tin with five-Mev deuterons, radioactivities with half-lives 9 minutes (–), 40 minutes (–), 26 hours (–), 10 days (–), about 70 days (–) and at least 400 days (sign unknown)... Inasmuch as neither we nor Pool, Cork and Thornton observe the 9-minute period when fast neutrons from Li+D are used, it is plausible to assign this period to Sn¹²⁵, obtained as the result of neutron capture by the heaviest stable isotope.” Half-lives of 8 m (1936Na02) and 6 m (1936Na01) had been reported for slow neutron activation of tin, however, no mass assignments were made. The 9 min. half-life corresponds to an isomeric level and the 10 day half-life was assigned to the ground state of ¹²⁵Sn ten years later by Lee and Pool (1949Le05).

Adapted from reference (2011Am01)

- 1936Na01 M. E. Nahmias and R. J. Walen, *Compt. Rend.* **203**, 71 (1936).
- 1936Na02 R. Naidu, *Nature* **137**, 578 (1936).
- 1939Li04 J. J. Livingood and G. T. Seaborg, *Phys. Rev.* **55**, 667 (1939).
- 1949Le05 J. C. Lee and M. L. Pool, *Phys. Rev.* **76**, 606 (1949).
- 2011Am01 S. Amos, J. L. Gross, and M. Thoennessen, *At. Data Nucl. Data Tables* **97**, 383 (2011).

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