

¹²⁸Sb

In 1956, Fränz et al. identified ¹²⁸Sn in “Die beiden Antimonisomere mit der Massenzahl 128” (1956Fr32). Neutrons produced by bombarding beryllium with 28 MeV deuterons from the Buenos Aires synchrocyclotron induced fission of uranium. Gamma-rays were detected following chemical separation. “Das Antimonisotop von 10,3 min Halbwertszeit läßt sich von seiner Muttersubstanz, dem Spaltzinn von 57 min Halbwertszeit, sehr rein abtrennen... Man muß daher der Isobarenreihe 57 min-Zinn → 10,3 min-Antimon die Massenzahl 128 zuordnen.” [The 10.3 m antimony isotope can be easily separated from the mother substance tin with a half-life of 57 min... Therefore the isobar chain: 57 m tin → 10.3 m antimony has to be assigned to mass 128.] In addition, Fränz et al. observed a 9.6 h half-life by bombarding tellurium with deuterons or neutrons which they also assigned to ¹²⁸Sb and corresponds to the ground state. In an earlier paper Fränz and Carminatti had assigned the 10.3 min half-life incorrectly to ¹³⁰Sn (1955Fr11). Even earlier a 10 min half-life had been reported without a mass assignment (1951Ba41).

Adapted from reference (2013Ka01)

- 1951Ba41 J. W. Barnes and A. J. Freedman, Phys. Rev. **84**, 365 (1951).
1955Fr11 I. Franz, J. Rodriguez, and H. Carminatti, Z. Naturforsch. **10**, 82 (1955).
1956Fr32 I. Franz, J. Rodriguez, and R. Radicella, Z. Naturforsch. **11**, 1037 (1956).
2013Ka01 J. Kathawa, C. Fry, and M. Thoennessen, At. Data Nucl. Data Tables **99**, 22 (2013).

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