

⁹⁴Kr

Amiel et al. discovered ⁹⁴Kr in 1972 at the Soreq Nuclear Research Centre, Israel, as reported in “Identification of ⁹⁴Kr and ¹⁴³Xe, and Measurement of γ -Ray Spectra and Half-Lives of Nuclides in the Mass-Chains 93, 94, and 143” (1972Am01). “The target was irradiated in a thermal-neutron flux of approximately 2×10^8 n cm⁻² sec⁻¹ from an external beam tube of the Israel Research Reactor-1.” The target contained 9 g of U₃O₈ of 93.3% enriched ²³⁵U. ⁹⁴Kr was identified by β -decay curves measured at the Soreq On-Line Isotope Separator. The half-life was measured to be 0.20(1) s. It should be mentioned that a half-life of 1.4(5) s was reported by Dillard et al. as the krypton parent of a 20 m yttrium isotope (1950Di01). Although this isotope is most likely ⁹⁴Y ($T_{1/2} = 18.7(1)$ m), Dillard et al. is not credited with the discovery because they were not able to specify the mass directly. In addition, the measured half-life is significantly larger than the correct value of 212(5) ms (2006Ab37).

Adapted from reference (2010He02)

- 1950Di01 C. R. Dillard, R. M. Adams, H. Finston, and A. Turkevich, Nat. Nucl. Ener. Ser. **9**, paper68 p. 624 (1950).
1972Am01 S. Amiel, H. Feldstein, M. Oron, and E. Yellin, Phys. Rev. C **5**, 270 (1972).
2006Ab37 D. Abriola and A. A. Sonzogni, Nucl. Data Sheets **107**, 2423 (2006).
2010He02 M. Heim, A. Fritsch, A. Schuh, A. Shore, and M. Thoennessen, At. Data Nucl. Data Tables **96**, 333 (2010).

Please cite this abstract as: “FRIB Nuclear Data Group, *Discovery of Nuclides Project*, Isotope Database, doi:10.11578/frib/2279152”