

## <sup>99</sup>Nb

<sup>99</sup>Nb was first observed by Duffield et al. in 1950 and reported in their paper “Radioactivities of Nb<sup>99</sup>, Ta<sup>185</sup>, and W<sup>185</sup>, and the Relative ( $\gamma,n$ ) and ( $\gamma,p$ ) Cross Sections of Mo<sup>100</sup>” (1950Du54). Irradiation of enriched <sup>100</sup>Mo with 23 MeV X-rays at the University of Illinois betatron produced <sup>99</sup>Nb in the reaction ( $\gamma,p$ ). “This hitherto unknown isotope has a half-life of 2.5 min. and decays by the emission of 3.2 MeV  $\beta^-$ -rays.” This half-life corresponds to an isomeric state and the ground state half-life of 10(2) s was measured 13 years later by Troutner et al. (1963Tr01).

Adapted from reference (2012Ny02)

- 1950Du54 R. B. Duffield, L. Hsiao, and E. N. Sloth, Phys. Rev. **79**, 1011 (1950).  
1963Tr01 D. E. Troutner, R. L. Ferguson, and G. D. O’Kelley, Phys. Rev. **130**, 1466 (1963).  
2012Ny02 A. Nystrom and M. Thoennessen, At. Data Nucl. Data Tables **98**, 95 (2012).

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