^{99}Zr

In 1970, Eidens et al. described the first observation of ^{99}Zr in "On-Line Separation and Identification of Several Short-Lived Fission Products: Decay of ^{84}Se, ^{91}Kr, ^{97}Y, ^{99}Nb, ^{99}Zr, ^{100,101}Nb and ^{101}Zr" (1970Ei02). Neutrons from the Jülich FRJ-2 reactor irradiated a ^{235}U target and the fission fragments were identified with a gas-filled on-line mass separator. Beta-γ- and γ-γ-coincidences were recorded. "A 468$\pm$3 keV line and a 548$\pm$3 keV line were detected as members of a γ-γ cascade in the coincidence investigations. They were assigned to ^{99}Zr" The measured half-life of 2.4(1) s corresponds to the ground state. A 400 (80) ns isomeric state was published later in the same year (1970Gr38). Previously only an upper limit of 1.6 s (1963Tr01) was reported for the half-life of ^{99}Zr and a measurement of 35(5) s (1960Or02) was incorrect.

Adapted from reference (2012Ny02)

1960Or02 C. J. Orth and R. K. Smith, J. Inorg. Nucl. Chem. **15**, 4 (1960).

1963Tr01 D. E. Troutner, R. L. Ferguson, and G. D. O'Kelley, Phys. Rev. **130**, 1466 (1963).

1970Ei02 J. Eidens, E. Roeckl, and P. Armbruster, Nucl. Phys. A **141**, 289 (1970).

1970Gr38 J. W. Gruter, K. Sistemich, P. Armbruster, J. Eidens, and H. Lawin, See Also CERN- **33**, p. 967 (1970).

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"