

¹⁷⁸Ta

Wilkinson discovered ¹⁷⁸Ta as reported in the paper “Neutron deficient radioactive isotopes of tantalum and wolfram” in 1950 ([1950Wi67](#)). The Berkeley 60-in cyclotron was used to bombard lutetium with 20, 30, and 38 MeV α -particles and hafnium with 10 MeV protons. Decay curves were measured following chemical separation. The ground state as well as an isomeric state were observed: “ 2.1 ± 0.1 -hour Ta¹⁷⁸: This activity was produced in 19 Mev α -particle bombardments of lutetium and also in proton bombardments of hafnium when it was formed in high yields corresponding to its allocation of mass 178... 9.35 ± 0.03 -min. Ta¹⁷⁸: ... The 9.3-min. activity has been observed directly in the bombardment of hafnium with 10 Mev protons. Allocation of the 21.5-day wolfram parent is made to mass 178 on the basis of reaction yields; since a longer-lived tantalum has been allocated to mass 178 from Lu+ α bombardments the 9.35 min. activity must be an isomer decaying independently.”

Adapted from reference ([2012Ro36](#))

[1950Wi67](#) G. Wilkinson, Phys. Rev. **80**, 495 (1950).

[2012Ro36](#) R. Robinson and M. Thoennessen, At. Data Nucl. Data Tables **98**, 911 (2012).

Please cite this abstract as: “FRIB Nuclear Data Group, *Discovery of Nuclides Project*, Isotope Database, doi:[10.11578/frib/2279152](https://doi.org/10.11578/frib/2279152)”