

¹⁶¹Hf

The first observation of ¹⁶¹Hf was reported in the 1973 paper “Study of hafnium α emitters: New isotopes ¹⁵⁹Hf, ¹⁶⁰Hf, and ¹⁶¹Hf” by Toth et al. (1973To02). Enriched ¹⁴⁴Sm and ¹⁴⁷Sm targets were bombarded with 80–153 MeV and 121–153 MeV ²⁰Ne beams from the Oak Ridge isochronous cyclotron, respectively. Recoil products were swept into a collecting surface with helium gas where α particles were measured with a Si(Au) detector. “The decay characteristics and mass assignments (made on the basis of yield curve measurements, cross bombardments, and parent-daughter relationships) of the three new α emitters are as follows: (1) ¹⁵⁹Hf, $E_\alpha = 5.09 \pm 0.01$ MeV, $T_{1/2} = 5.6 \pm 0.5$ sec; (2) ¹⁶⁰Hf, $E_\alpha = 4.77 \pm 0.02$ MeV, $T_{1/2} \sim 12$ sec; and (3) ¹⁶¹Hf, $E_\alpha = 4.60 \pm 0.01$ MeV, $T_{1/2} = 17 \pm 2$ sec.”

Adapted from reference (2012Gr19)

- 1973To02 K. S. Toth, R. L. Hahn, C. R. Bingham, M. A. Ijaz, and R. F. Walker Jr., Phys. Rev. C **7**, 2010 (1973).
2012Gr19 J. L. Gross and M. Thoennessen, At. Data Nucl. Data Tables **98**, 983 (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)”