

^{138}Cs

Seelmann-Eggebrecht identified ^{138}Cs at the Kaiser Wilhelm Institut für Chemie in Berlin-Dahlem, in their 1943 paper “Über einige aktive Xenon-Isotope” (1943Se02). Barium was irradiated with fast neutrons and cesium isotopes were produced in (n,p) reactions. Beta-decay curves were measured and a cesium isotope with a half-life of 33 min was detected: “Sowohl nach seiner Halbwertszeit von 33 Minuten als auch nach der Absorptionskurve seiner β -Strahlen ist dieses mit dem bei der Uranspaltung nachgewiesenen 33-Minuten-Cäsium identisch. Nun hat W. Riezler das 3,8-Minuten-Xenon der Masse 137 zuordnen können. Da dieses Xenon-Isotop jedoch keinen Folgekörper von 33 Minuten Halbwertszeit besitzt, muß dieses Cäsium-Isotop der Masse 138 zugeordnet werden.” (This isotope is according to the 33 min half-life as well as the β -ray absorption curve identical with the 33 min cesium isotope observed in uranium fission. W. Riezler was recently able to assign a 3.8 min xenon isotope to mass 137. The present cesium isotope must therefore be assigned to mass 138, because there is an isotope with a 33 min half-life in the decay chain of this xenon isotopes.) Half-lives of 35 min (1939Ha17), 30 min (1939Gr02, 1939He01), 33 min (1939At01, 1939Ha14), and 32.0(5) min (1940GI05) had previous been reported in uranium fission without a unique mass assignment.

Adapted from reference (2012Ma48)

- 1939At01 A. H. W. Aten, C. J. Bakker, and F. A. Heyn, *Nature* **143**, 679 (1939).
- 1939Gr02 A. v. Grosse, E. T. Booth, and J. R. Dunning, *Phys. Rev.* **56**, 382 (1939).
- 1939Ha14 O. Hahn and F. Strassmann, *Naturwissenschaften* **27**, 529 (1939).
- 1939Ha17 O. Hahn and F. Strassmann, *Naturwissenschaften* **27**, 163 (1939).
- 1939He01 F. A. Heyn, A. H. W. Aten Jun, and C. J. Bakker, *Nature* **143**, 516 (1939).
- 1940GI05 G. N. Glasoe and J. Steigman, *Phys. Rev.* **58**, 1 (1940).
- 1943Se02 W. Seelmann-Eggebert, *Naturwissenschaften* **31**, 491 (1943).
- 2012Ma48 E. May and M. Thoennessen, *At. Data Nucl. Data Tables* **98**, 960 (2012).

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