

²⁴³Cf

²⁴³Cf was simultaneously discovered in 1967 by Sikkeland et al. in “Decay properties of the new isotope, ²⁴³Cf and of ²⁴⁴Cf” (1967Si08) and Fields et al. in “Nuclear properties of ²⁴²Cf, ²⁴³Cf, ²⁴⁴Cf, and ²⁴⁵Cf” (1967Fi04). Sikkeland et al. used the Berkeley Hilac to bombard uranium targets with a 124 MeV ¹²C beam. Reaction products were slowed in helium gas and deposited on a platinum disk which was then moved to an α grid chamber. “A least-squares analysis of the decay of the α -particle group at 7.05 ± 0.02 MeV in which about 300 events were used gave a half-life of 10.3 ± 0.5 min. The assignment of the emitter to ²⁴³Cf was based on the excitation functions.” Fields et al. bombarded ²⁴²Cm and ²⁴⁴Cm targets with a ³He beam from the Argonne 60-in. cyclotron. The subsequent α decay of the recoils was measured. “Irradiations of ²⁴²Cm and ²⁴⁴Cm by ³He ions produced two new isotopes of californium; ²⁴²Cf emits a 7.35 ± 0.01 MeV α -particle group and has a half-life of 3.2 ± 0.5 min. ²⁴³Cf emits 7.06 ± 0.01 and 7.17 ± 0.01 MeV α -particle groups and decays with a half-life of 12.5 ± 1.0 min.” Both articles were submitted on March 14, 1967 and the discovery credit is given to Sikkeland and Ghiorso because their article appeared first in the journal.

Adapted from reference (2013Fr02)

- 1967Fi04 P. R. Fields, R. F. Barnes, R. K. Sjoblom, and J. Milsted, Phys. Lett. B **24**, 340 (1967).
1967Si08 T. Sikkeland, A. Ghiorso, J. Maly, and M. J. Nurmia, Phys. Lett. B **24**, 333 (1967).
2013Fr02 C. Fry and M. Thoennessen, At. Data Nucl. Data Tables **99**, 96 (2013).

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